PULP & PAPER

JANUARY 1959

Paperboard to Rise in '59
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Exclusive on a Blade Coater
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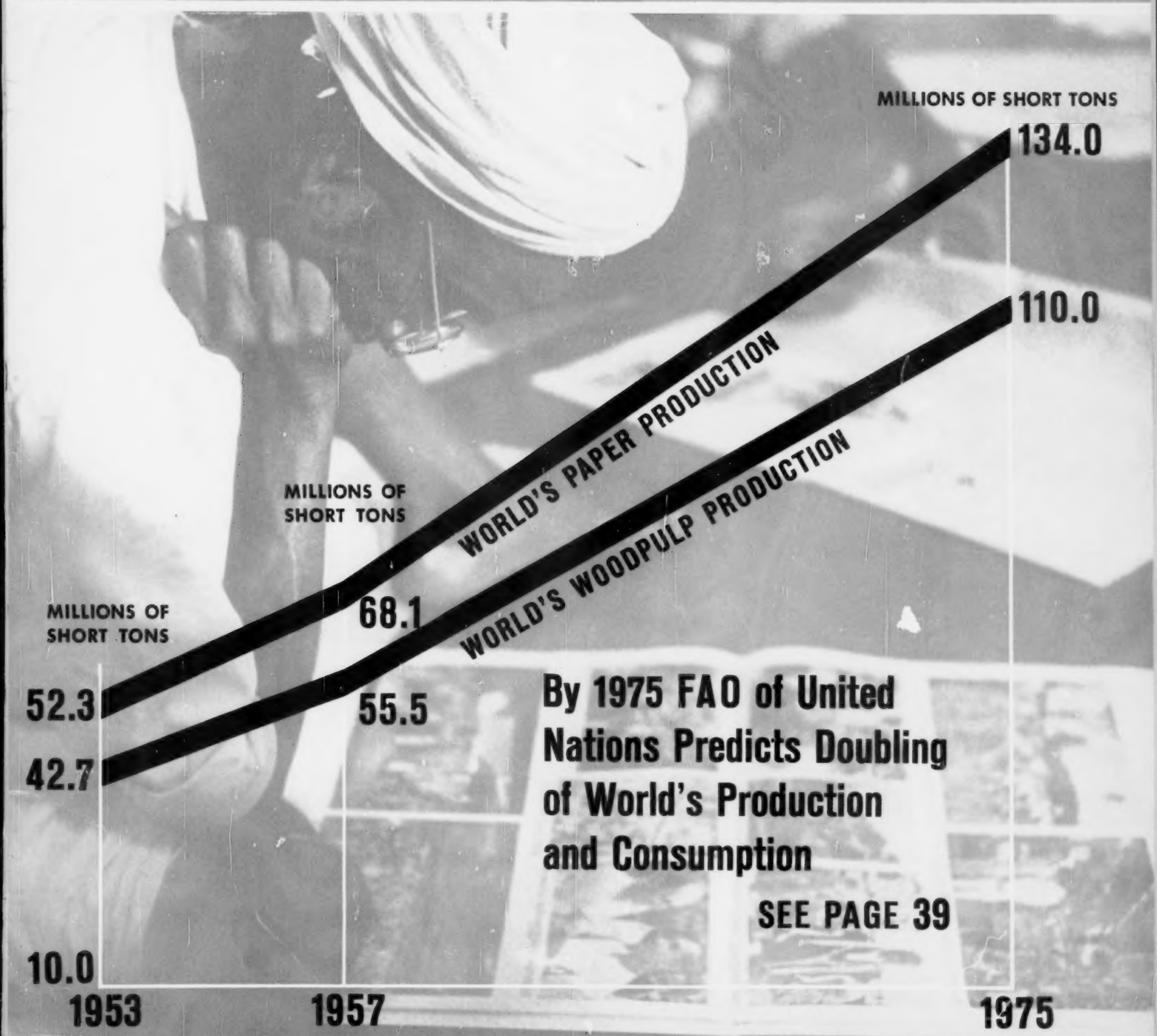
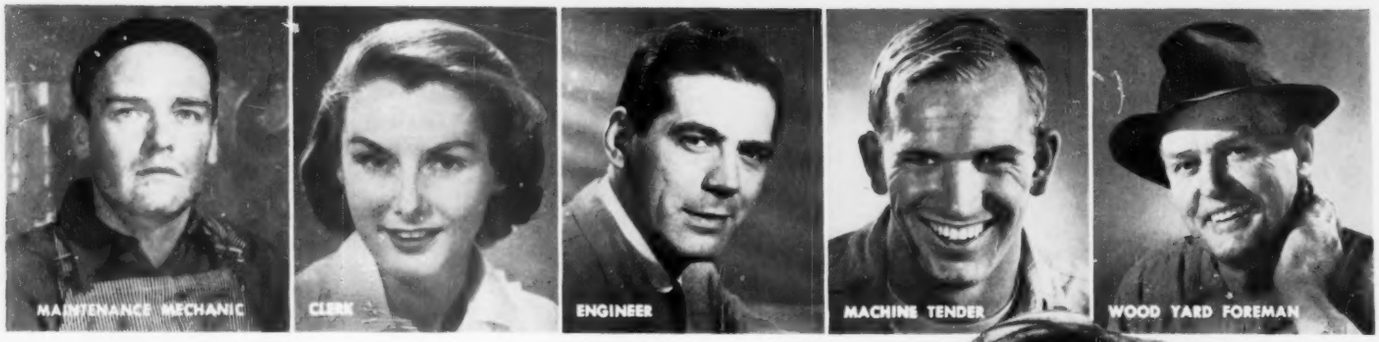
Buying Wood by Pound Pays
page 98



By 1975 FAO of United Nations Predicts Doubling of World's Production and Consumption

SEE PAGE 39

1953 and 1957 figures from world-wide country-by-country statistics gathered and copyrighted by PULP & PAPER



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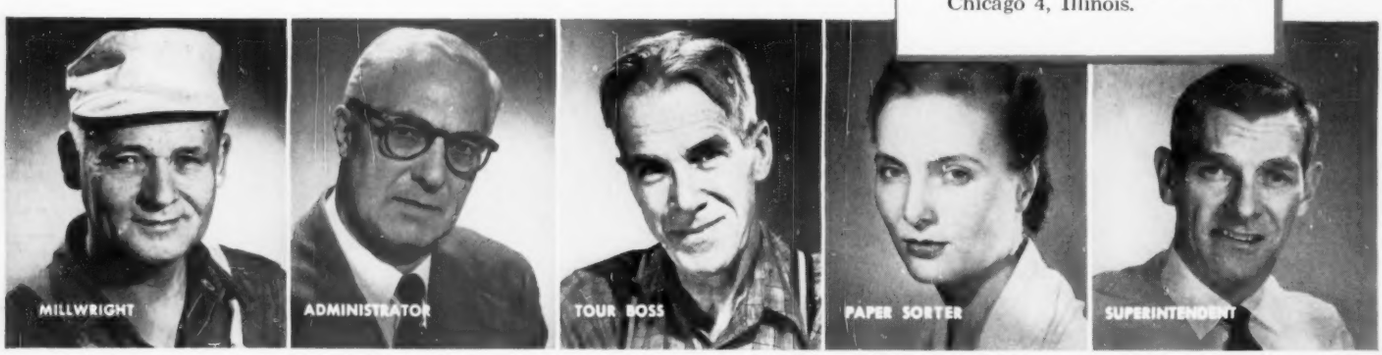
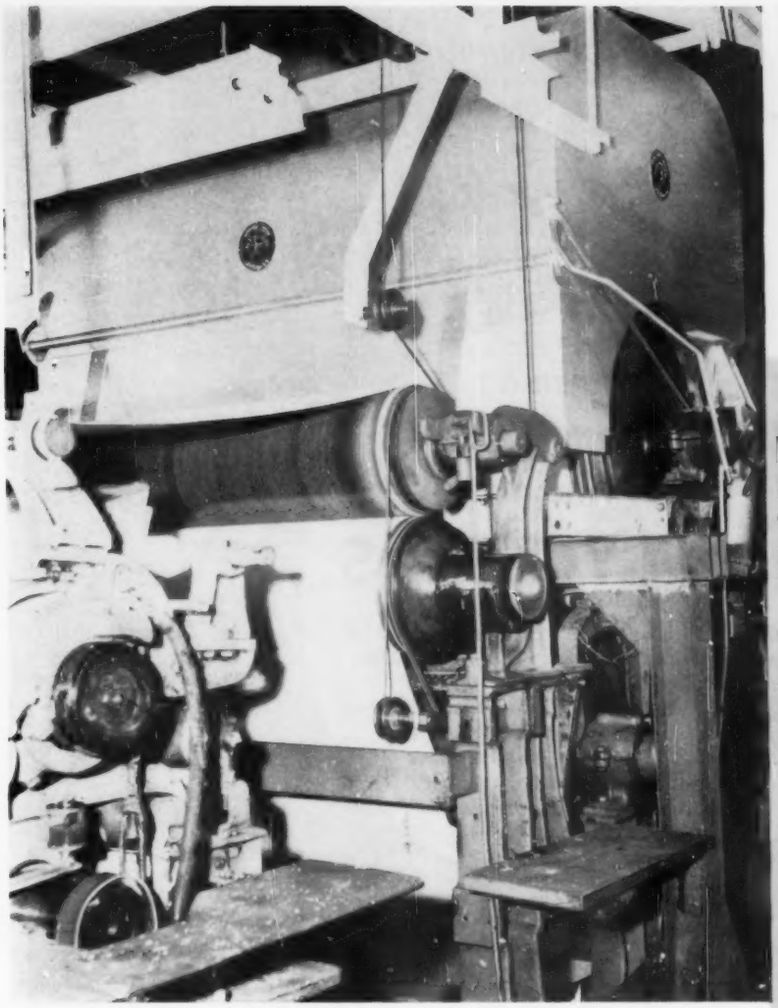
CONTEST RULES

1. The contest is open to all employees of pulp and paper mills in North America.
2. Your paper should be confined to 1500 words, typed with double spacing on one side only of plain sheets, 8½" x 11".
3. Place your name, the name and address of your mill, your position or duties and your home address on the cover sheet only. This information must not appear in the manuscript.
4. Mail your entry before midnight March 31, 1959 to:
   The Secretary and Treasurer, The American Pulp and Paper Mill Superintendents Association, 327 So. LaSalle Street, Chicago 4, Illinois.





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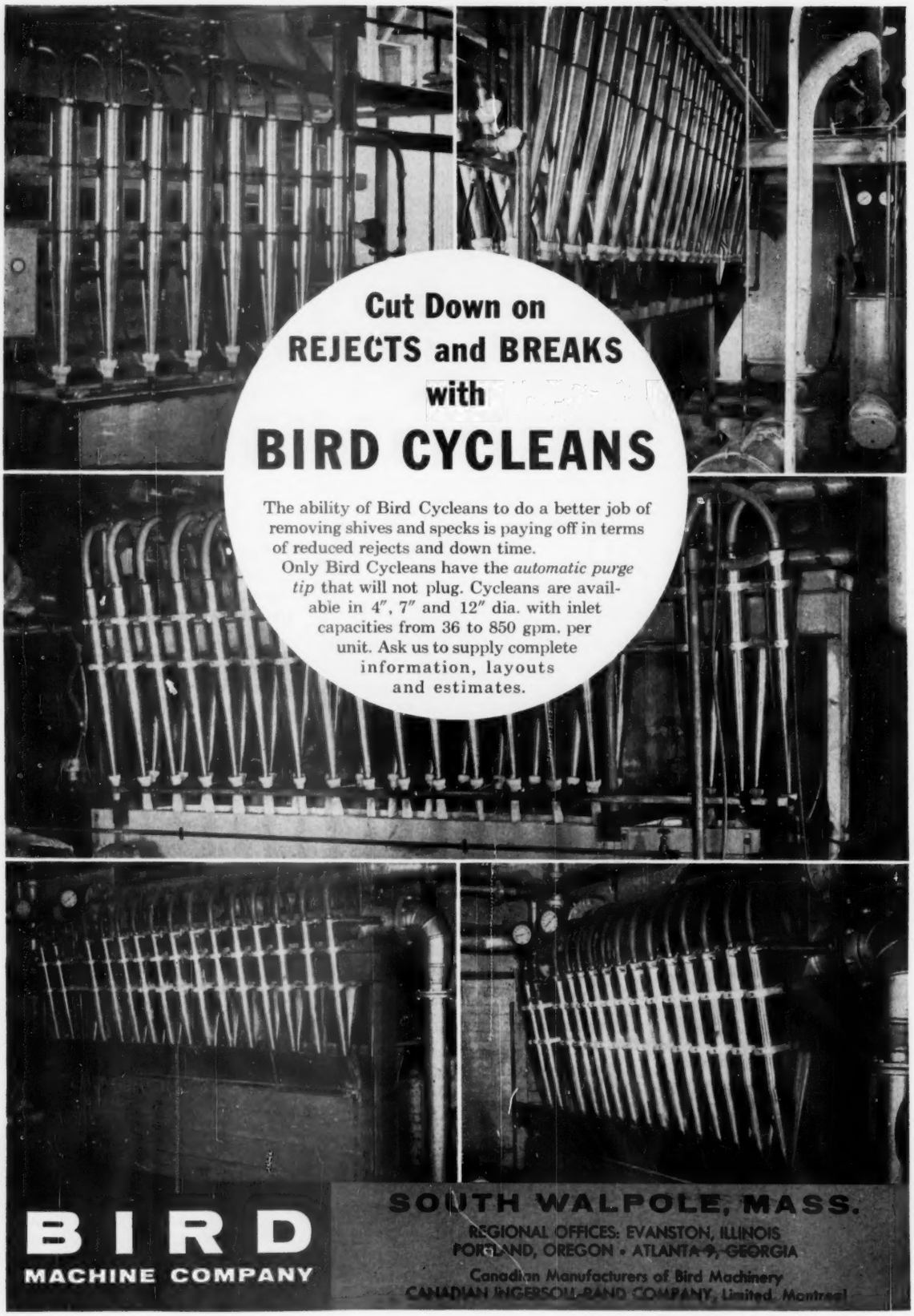
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PULP & PAPER

Reader's Guided Tour

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NUMBER 1

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Our "Cover Story"—World Trend is Up 39

An FAO/UN survey points to a worldwide woodpulp production of 100,000,000 metric tons (110,000,000 short tons) and a doubling of paper and paperboard consumption by about 1975, providing that long term trends of past years maintain only a conservative average increase annually. Our cover projects paper and paperboard production to 134,000,000 short tons (about 122,000,000 metric tons) in 1975. This would be required to meet a doubling of worldwide consumption. FAO anticipates that wood will continue to provide about 90% of the raw material for paper and paperboard in 1975. Background for our cover is a scene in India, where demand for printing papers is rising rapidly. Readers want translated editions of former one-language newspapers, says Bowater Paper Corp. Ltd., which provided the picture.

1959 Looks Good for Paperboard 40

Re-elected NPA President Kennedy says industry has reached "maturity." Some segments reach for new records. Econometric Institute analyst says end-use demand will rise 5%—production will rise even higher to make up for inventory liquidation.

Exclusive—Blade Coater in New Field 50

Maurice R. Castagne, Eastern editor of P&P, takes wraps off one of industry's hottest machines—Crocker, Burbank's coater for specialty book papers. Some refinements added to Rice Barton's trailing twin blade coater, designed for 2,000 fpm.

"Letters to Editor"—on Paper's Rank 5

You'll be especially interested in this month's correspondence. Paper industry is getting pretty rough treatment. Statistics to prove anything!

Special Report on New Rayonier Mill 44

New photographs and details on Jesup, Ga., mill where Rayonier now produces more than one-fifth of total woodpulp and cellulose. William F. Diehl Jr., P&P's Southern editor, provides new facts.

Buying Wood by Pound is Paying Off 98

At Lake States APA meeting, this major topic of interest among pulpwood producers is discussed by three speakers. It is saving money and time for Mead, S. D. Warren, and Wood Conversion.

CIRCULATION DEPT., 500 Howard St., San Francisco 5, Calif. C. C. Baake, Circ. Mgr. Send subscription orders and changes of address to PULP & PAPER, above address. Include both old and new addresses.

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MILLER FREEMAN PUBLICATIONS

The Editor Reads His Mail

Address letters to The Editor, PULP & PAPER, 1791 Howard St., Chicago 26, Ill.

You Can Prove Anything with Statistics: Look What's Happening to Paper Industry!

—Calhoun, Tenn

Editor: I noticed an article in the *American Metal Market* which claims that, because of its continued growth during 1957, the electronics industry became the fifth largest U.S. manufacturing group. It goes on to state that this information is contained in the Electronic Industry's 4th annual "Fact Book" for 1958.

I am of the impression that the pulp and paper industry occupies this fifth position, and I wonder if you have any comments to make regarding the electronics industry claim.

R. BRUCE REID
Gen. Purchasing Agent
Bowaters Southern Paper Corp.

Ranked 9th! And Going Lower!

—Washington, D.C.

Editor: To the best of my knowledge, my office has never made a report ranking the pulp, paper and board industry. We have, however, included in our Quarterly Pulp, Paper and Board Industry Report (Annual Review issue) the total value of products produced of pulp, paper, paperboard and converted products. However, a total-value-of-products figure is somewhat misleading since value of pulp produced is included again in value of paper and paperboard produced, and in turn the value of converted products would include both values.

It has been my understanding that frequent references to the industry as ranking fifth among U.S. manufacturing industries originated with the American Paper and Pulp Assn. If I recall correctly, the Bureau of Census data on value of shipments for the year 1953 were utilized. A Census report released Mar. 20, 1958 (Series MAS-55-2) shows value of shipments of various industries for the year 1956, and here the paper and paperboard industry is in sixth position. The value figures for aircraft for 1956 included military aircraft, whereas in 1953 the military aircraft figure was withheld. This is the reason paper and paperboard dropped from fifth position in 1953 to sixth in 1956.

The Bureau of the Census considers that value-of-shipments data are not a good basis for comparison of industries. Instead, the Bureau recommends using their "value added by manufacture" data. A Census report released Apr. 9, 1958 (Series MAS-56-4) ranks industries on this basis. In this report Census includes pulp, paper and board, but not converted products. The result is that for 1956 the industry ranks as ninth, the same rank it held in 1947.

The new revision of the Bureau of the Budget Standard Industry Classification shows paper and paperboard as two separate industries. Thus in future Census data the figures will be shown separately, whereas up to now they were grouped as one industry. Obviously, this will place their relative positions much lower in industry ranking.

W. LEROY NEUBRECH
Asst. Director, Pulp, Paper and Paperboard, Forest Products Div., Business and Defense Services Admin., Dept. of Commerce.

Eds. note—The Bureau of the Census explains its method of figuring value added by manufacture as follows: "The Census report shows value added by manufacture for 142 industry groups in 1956, 1955 and 1954 on an 'adjusted' and 'unadjusted' basis. 'Unadjusted' figures are the value of products shipped (excluding resales) during the year less the cost of materials, supplies, fuel, electric energy and contract work. 'Adjusted' value added is derived by adding value added by merchandising plus net change in finished products and work-in-process inventories between the beginning and end of the year to the unadjusted figure."

It has been said that paper is used more than anything else in this country, except water. Paper is a better measure of a nation's true wealth or its standard of living than milk, metals or even money.

PULP & PAPER magazine is quite sure statistics can be found to prove this is the nation's No. 1 industry.

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MONTHLY REPORT – WORLD NEWS

SWEDISH FINANCIER MAY OPEN NEW PULP REGION . . . plans go ahead for development of woodpulp industries in an almost untouched wilderness of northern British Columbia, in the Western Canadian interior. Standing timber reserves total some 200 billion board feet. Axel Wenner-Gren, Swedish industrialist, and associates, form a new company for a major development (story in this issue) . . .

GOOD NEWS AT TURN OF YEAR . . . with many American pulp and paper men reporting slight upturns. Many say it is significant that the gains are being held, and continue to climb. U. S. A. Gross National Product recovered 72% in three months. Fortune magazine says the recession is over, and others echo this.

RECOVERY SHOULD CONTINUE THROUGH 1959 . . . Donald J. Hardenbrook, vice pres. of Union Bag-Camp Paper Corp., says the recovery from the recession low point in U. S. A. is genuine. The company's big Savannah, Ga., plant is operating at capacity and is expected to continue that way. Mr. Hardenbrook says there is a "tremendous potential" in the overseas market, where Union Bag's business has been steadily expanding. He predicts overseas paper mills will look to North American pulp mills to fill their kraft requirements.

HOPES TO SUPPLY THIRD OF GERMAN MARKET . . . Walter P. Paepcke, chairman of Container Corp. of America, has announced that the Chicago company is seeking about a third of the entire paper processing market in West Germany. Recently, Container bought 79% of the share capital of Bremer Papier-und Wallpappenfabrik AG. The price was $1.7-million. Container first went into the West German paper processing market in 1955, when it founded Europa Carton AG, in Hamburg. In only three years, this company has enlarged its operations to include six plants in the Federal Republic.

CUBAN REVOLUTION HOLDS UP WORK . . . Reliable reports from travelers in Cuba are that work has been held up on two new mills because of activities of the rebel guerrilla forces opposing the Batista government. In one case, rebels have stolen machinery and harassed trucks delivering goods, because the mill is partially government-financed.

TIMBER FROM WALES IS BEING SHIPPED to the British Bowater mill at Risor, Norway, to test a new wood-processing method. No details have been released.

AN "URGE" IN UNDERDEVELOPED NATIONS . . . At the United States' 45th annual National Foreign Trade Convention, one of the speakers, Tom Lilley, Ford Motor Co.'s International Division general mgr., said "underdeveloped nations of Latin America, Africa and Asia are being driven by an irresistible urge to improve living standards through industrialization, and won't be stopped by any amount of talk or local political changes."

MORE OVERSEAS ACTIVITY PREDICTED . . . C. C. Crittenden, president, Signode Steel Strapping Overseas Co., Chicago, says "we must export capital and know-how," and Warren J. Holmes, mgr, of engineering products sales, Allis-Chalmers International, Inc., says "there is more activity going on overseas—there are more people out there generating business."

SOUTHERN U.S.A. FACES INDUSTRY LOSS . . . says Yale Brozen, professor of economics, University of Chicago School of Business. He told the Southern Economic Assn. in Atlanta that "the time may be near when Southern United States will be faced with the loss of many industries that it wooed away from the North—to such countries as Cuba, Mexico and Puerto Rico."

BAGASSE PILOT PULPING PLANT BUILT at Crown Z's Central Research Dept., Camas, Wash., U. S. A. Pulp-making activities are expected to start around Feb. 1. This new unit will operate as part of an expanded research and testing program being carried out under the joint sponsorship of CZ and Hawaiian Sugar Planters Assn. The equipment is designed to de-

B.F.Goodrich

Better water removal at lower cost with B.F.Goodrich suction press rolls

Substantial savings on freight costs can be made by mills east of the Rockies

SIX years ago, this paper mill changed from a solid, rubber-covered press roll to the suction press roll pictured above. They soon found that the B.F. Goodrich rubber-covered roll gave them maximum water removal at a far lower cost. Felt life was increased, the machine could operate at higher speeds.

The mill is getting better paper formation, too, with less shadow marking. That's because B.F.Goodrich developed a special tough rubber compound for the cover that keeps the drilled holes from cupping out. Use of this longer-lasting rubber compound also means that the roll stays efficient longer, does not have to be re-covered as often as some types of suction press rolls.

Many paper mills east of the Rockies have found that by specifying B.F.Goodrich they can save on freight costs. Reason is that the B.F.Goodrich plant is much closer than any other roll-covering facility to the company that specializes in drilling holes in suction rolls.

Whether you're buying a new paper machine or having suction press rolls re-covered, be sure to specify B.F. Goodrich to your machine builder. You'll save money in the beginning, and get longer and more efficient service. For more information on these suction press rolls or any of the rolls B.F.Goodrich makes for the paper industry, write *B.F.Goodrich Industrial Products Co., Dept. M-496, Akron 18, O.*

B.F.Goodrich *paper mill rolls*

MONTHLY REPORT – WORLD NEWS

termine the commercial feasibility of utilizing bagasse as new material for paper manufacture in Hawaii.

BIG REDUCTION IN POLLUTION despite more capacity . . . this was gist of a report on the pulp and paper industry to the 51st annual meeting in Cincinnati of the American Institute of Chemical Engineers. W. H. Bialkowski and J. C. Brown, Weyerhaeuser Timber Co., who made the report, said the "surest means of in-plant waste control for spent pulping liquors is reclaiming chemicals and destroying organic b.o.d. load by combustion."

U.S.A. PULP PRODUCTION AND SHIPMENTS DOWN SLIGHTLY . . . For the months of 1958, U.S. mills produced 17,947,582 short tons of woodpulp, a decrease of only 2% under the figure for the same period in 1957. Shipments to Europe totaled 259,663 tons and to Latin America, 70,924 tons, which, in both cases, represented a decline of only 5%. Shipments to the domestic (U.S.) market totaled 1,481,463 tons, an 11% decline, and total foreign shipments of 423,272 tons, represented a 16% drop (shipments to Asia were down 52% and Canada, 17%).

TRAILING BLADE COATS SPECIALTY BOOK GRADES in a new successful installation of Rice Barton equipment at Crocker, Burbank & Co., Fitchburg, Mass., U.S.A.

EXPANDS IN BY-PRODUCTS . . . Puget Sound Pulp & Timber Co., Bellingham, Wash., U.S.A., has undertaken a $400,000 program for expanding production of by-products, according to Pres. Lawson Turcotte. Initial phase involves enlarging capacity for manufacturing lignin concentrates from residues resulting from the manufacture of alcohol from spent sulfite liquor. Puget Pulp's Lignosite has various uses, including agricultural and industrial applications.

SOUTH PRODUCED $396 MILLION IN PULPWOOD . . . Official figures from the Southern and Southeastern U.S. Forest Service Experiment Stations in Asheville, N.C., and New Orleans, show that 12 Southern states in U.S.A. produced $396 million worth of pulpwood last year. Georgia, the top-ranking state, produced $77 million and Alabama followed with $46 million. Mississippi, Louisiana, North Carolina, Florida, South Carolina and Virginia all had better than $30 million.

CONTAINER CORP. TO CONVERT IN SOUTH . . . A $1 million converting plant to produce boxes and other similar products will be built adjacent to Container Corp.'s new bleached kraft and board mill at Brewton, Ala., U.S.A.

NEW ON THE LINE . . . New machines which have been put on the line either for full production or shakedown in the past few months in Southern U.S.A.: Number 10 machine at Ecusta division's mill in Pisgah Forest, N.C.; cylinder machine at Southland Paper Mills in Lufkin, Tex.; Union Bag-Camp's machine at Franklin, Va.; Marathon's new mill at Naheola, Ala. Scheduled to start early next year: new machines at Bowaters Southern in Calhoun, Tenn.; Champion's big new machine at Canton, N.C.; Number 2 machine at Halifax Paper in Roanoke Rapids, N.C.

MARKET PULP MILL COST $47,000,000 . . . Cost of British Columbia Forest Products' new sulfate pulp mill at Crofton, B.C., Canada exceeded $47,000,000, according to a report issued by E. P. Taylor, chairman of the board, and C. D. Dickey, Jr., president. The present position of over-capacity in the industry is expected to continue through the next year, according to Mr. Dickey, and it is doubtful that the Crofton mill will be operated at capacity. . . .

IP FILES FOR WATER IN OREGON . . . International Paper Co., for many months considering future U.S.A. Pacific Coast sites for one or more pulp mills, has filed for water priorities in three Oregon locations. Two applications are for withdrawing water from the Umpqua River system, one in the Roseburg area and the other near Gardiner. The third concerns water from Williamson River in Klamath County, east of the Cascade range summit and bordering California. Applications must be acted on within 60 days but may be extended by the state board.

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MONTHLY REPORT – WORLD NEWS

NEW MACHINE FOR VIRGINIA MILL . . . A new Beloit Iron Works 170 in. machine making 265 tpd at first, later possibly up to 380 tpd, is being built for Owens-Illinois' semi-chemical mill at Big Island, Va., according to Vice Pres. C. G. McLaren. It will have a Ross Engineering hood and air system. Two old 102 in. machines (200 tpd) will remain as standby or may be used for special papers. New machine is to start up by Sept. 1.

GULF STATES WILL SPEND $20,000,000 to make improvements at both its Tuscaloosa, Ala., and Demopolis, Ala., mills. At Demopolis, now a pulp mill, fine paper grades will also be made.

STARTS HARDBOARD MILL AT CATAWBA, S.C. . . . Bowater Board Co., division of Bowaters Southern Paper Corp., began construction there of a $7,000,000 hardboard plant to be completed in 1960, with daily capacity of 500,000 sq. ft. daily. Bowaters Carolina Corp. is already building a $35,000,000 pulp mill adjacent to the hardboard mill.

CARTHAGE, N.Y., MILL IS REOPENED . . . This St. Regis mill, closed since April 1957, has resumed making about 70 tons of kraft and creped papers daily. It started up Nov. 24 with Winslow B. Mills as mill manager. He had been general supt. of the St. Regis Kraft Center at Pensacola, Fla., from 1953 to July 1958. Before that he was supt. in the Northern mills.

A PLAQUE FOR "SEMINOLE CHIEF" . . . A bronze plaque commemorating the first time a paper machine has ever made 1,000 tons in one day is mounted on the hood of the big St. Regis Jacksonville mill machine, which actually achieved the record Aug. 17, with 1,025.67 tons. Beloit Iron Works officials made the presentation and Vice Pres. J. H. McCarthy of St. Regis and other St. Regis executives were on hand. Floyd McLeod, supt., was the recipient (story on Seminole Chief, PULP & PAPER, March 1958).

WILL RECONDITION LEASED MILL . . . Container Corp. of America has leased Atlantic Carton Corp.'s paperboard mill in New Bedford, Mass. The mill has two machines–a 72 in. five cylinder, and a 110 in. six cylinder, and a capacity of 100 tons per day. Extensive reconditioning will be necessary, according to Fred S. Crysler, vice pres. i/c of CCA's eastern boxboard and carton div.

NEW LAKE FOR ARKANSAS–Lake Erling, named for Erling Riis, vice president of International Paper Co., and gen. mgr. of its Southern Kraft Division, is a new 7,000 acre fresh water lake, 15 miles long, near Taylor, Ark., built to assure the Springhill, La., mill of adequate water in drought periods. It was dedicated recently as a recreation spot and will be one of Arkansas' finest fishing lakes.

SAFETY RECORD CONTINUES . . . Crown Z's West Linn, Ore. mill has stretched its safety record past the "1,000,000 man hours without a disabling injury" mark. Participating departments include paper machines, mixer-beaters, supercalenders, coating plant and laboratory. The last disabling injury among the papermaking personnel occurred July 30, 1957.

FORM NEW COMPANY . . . East Texas Pulp and Paper Co. has assigned its Ex-Cell-O Pure-Pak license to a newly-formed converting company, Precision Carton Co., Inc. The new company will make Pure-Pak milk bottle blanks exclusively from paperboard made by Eastex at Evadale, Tex. R. M. Buckley is board chairman and Robert A. Morris, pres. and chief exec. officer. Mr. Buckley is pres. of Eastex . . .

NEW BOARD MILL IN WEST . . . Stramit Corp. of Havre, Mont. is to build a plant at Walla Walla, Wash. to manufacture building board from wheat straw according to pres. W. P. Haley. Production will include board for insulation, roofing, sheathing and exterior wall applications. The announced plant is expected to get into operation next summer.

HAMILTON PAPER CO., MIQUON, PA., STARTS MACHINE . . . a new Black-Clawson 126-in. fine paper machine designed for speeds up to 1,200 fpm of bond and offset papers (80 to 100 tpd). Machine has been christened Hugo in honor of Hugo H. Hanson, chairman of the board.

World-famous Radio City Music Hall Rockettes

PUGET PULP IS UNIFORM

Bleached Sulfite Pulp

PUGET SOUND PULP & TIMBER CO.

BELLINGHAM • WASHINGTON

Recent Soviet Russian Papers – Special Selections

Pitch Troubles—Russia

TUMBIN, P. A. Bumazh. Prom. 33, no. 3: 14-16 (March, 1958). [In Russian] Abstr. Bull. Inst. Paper Chem. 29: 394.

Experiments conducted at Kamskii sulfite mill showed that a definite relationship exists between the cymene content of the cooking liquor and the pitch content of sulfite pulp and that the amount of pitch deposited on the equipment and on the fibers varies in the different stages of the pulp-manufacturing process. The highest amount is deposited in the beaters, and its removal at this stage appears to be the most important. The beater addition of 2 kg. kaolin or 0.2 kg. trisodium phosphate/ton of pulp eliminated the deposition of pitch on the walls of the beaters and on the wire of the paper machine. At the Kamskii mill, the resin content of dried pulp was lowered from 1.5 to 1.2-1.3% by the introduction of the following measures: removal of cymene from the relief gases; use of purified water in the pulp cleaners; removal of fines; treatment of pulp with 4 kg./ton of alkali after chlorination; and addition of kaolin to hollanders and conical refiners. J.S.

Dissolving Pulp—5% NaOH

NAGRODSKII, A., and POHZITKOVA, E. I. Bumazh. Prom. 33, no. 2: 2-3 (Feb., 1958). [In Russian] Abstr. Bull. Inst. Paper Chem. 29: 405.

The 5% sodium hydroxide-soluble fraction (*I*) in 72 samples of dissolving pulp (from three mills) ranged from 1.52 to 6.94%. Determinations of hardness and viscosity of 14 samples from one of the mills showed that higher permanganate numbers and higher viscosities are, generally, accompanied by higher *I* contents. Laboratory experiments proved that during chlorination and refining the content of *I* can be considerably lowered and that its increase during the subsequent bleaching stage can be avoided. Bleached pulps containing 1.5-2% *I* can be obtained from unbleached pulps with 4-5% *I* if the cooking is done under appropriate conditions, i.e., with thorough impregnation of the chips, circulation of the cooking liquor, and digestion with a strong acid to a hardness of about 30 permanganate units. The process should be controlled by determinations of *I* during bleaching and refining. J.S.

Presented with permission of The Institute of Paper Chemistry, under supervision of Curtis L. Brown, editor of IPC Bulletin. Photostats or translations of original reports available at reasonable cost by writing Eugene Bunker, librarian, Institute of Paper Chemistry, PO Box 498, Appleton, Wis., U.S.A.

Determines Pulp External Surface

VINETSKAYA, E. YA. Bumazh. Prom. 33, no. 4: 6-9 (April, 1958). [In Russian] Abstr. Bull. Inst. Paper Chem. 29: 402.

The method described consists of mixing a sample of fibers with an excess of a colloidal solution of Congo red (buffered at pH 3.8-4) of known concentration, filtering off the fibers, and determining the concentration of the dye in the filtrate. The mixing is carried out in a homogenizer for 10 min. (a time sufficient for equilibration) at 19-20°C. (to avoid diffusion). The external surface area of the fibers is obtained by multiplying the amount of dye adsorbed by 1 g. of fibers by a constant (calculated by multipying the surface: weight ratio of the colloidal particle by the Avogadro number). In contrast to molecular solutions of Congo red, which are adsorbed at both the external and the internal surfaces of the fibers, the colloidal dye particles are adsorbed at the external surface only. Determinations of specific external surface of sulfite pulp during the process of beating gave an S-shaped curve, indicating that the specific surface increases rapidly until a freeness of 65°S.-R. is reached, and then at a slower rate. At 49-52°S.-R. a more complete fibrillation was obtained in a Lampén mill than in a metal-bedplate hollander, and the highest degree of fibrillation (specific surface area of 58,200 sq. cm./g.) was achieved in a hollander with a basalt bedplate. From a curve expressing the relation between beating time and specific surface, the optimum beating time can be easily determined. J.S.

Semichemical Pulp

KOROTKOV, V. S., and TRET'YAKOVA, V. YU. Bumazh. Prom. 33, no. 2: 14-17 (Feb., 1958). [In Russian] Abstr. Bull. Inst. Paper Chem. 29: 413.

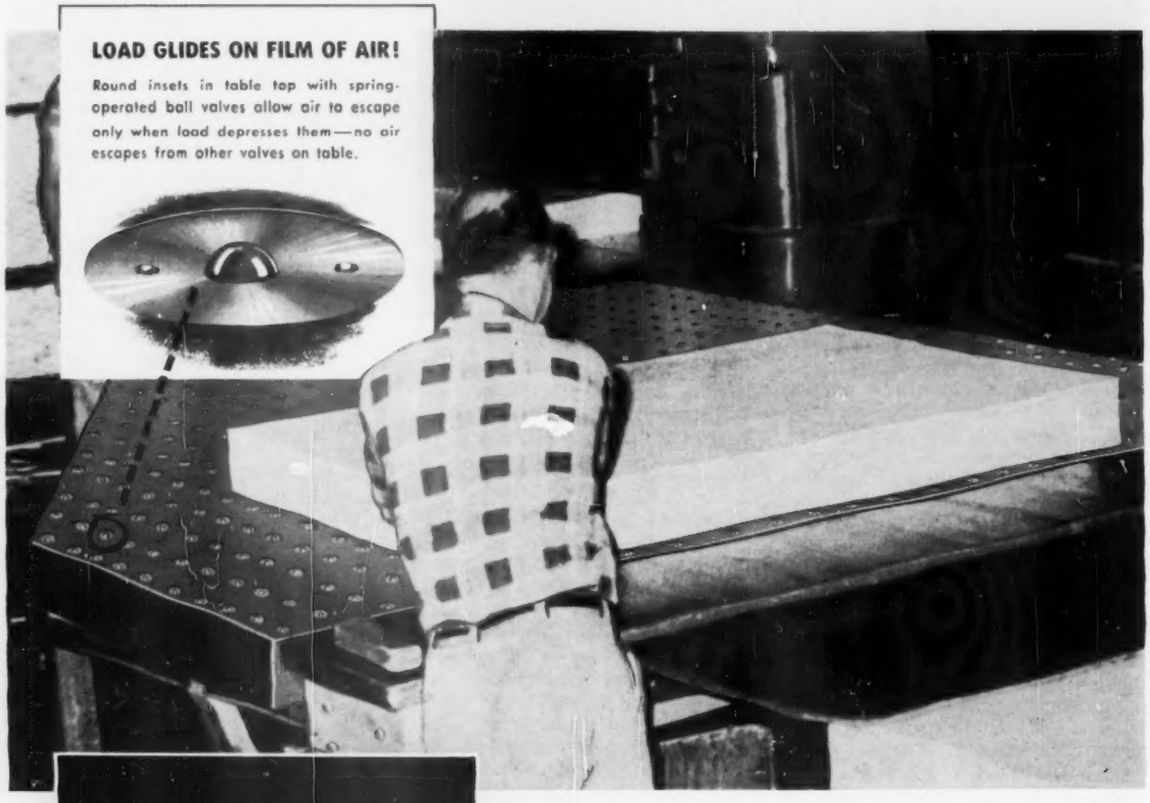
Properties of semichemical pulps and chemigroundwood, obtained on a pilot-plant scale from birchwood chips (30-40% moisture content) are reported. Bleachable semichemical pulps from debarked wood chips were prepared by impregnation at 600 mm. mercury, cooking for 2 or 3 hr. at 170°C. with alkaline sulfite liquor (initial pH 9.5-10, sodium sulfite: sodium carbonate ratio 2:1 and 4:1, and solids:liquor ratio 1:4), and fiberization in a Hydrafiner. Unbleached pulp cooked for 2 hr. gave yields of 71% and contained 20.12% pentosans, 0.55% oleoresins, 78.23% alpha-cellulose, 1.72% lignin, and 1.08% ash. After a three-stage bleaching (chlorination and hypochlorite treatment) the contents of alpha-cellulose, pentosans, lignin, ash, and resin were 78.6%, 19.9%, 0.98%, 0.53%, and 0.47%, respectively. The unbleached and bleached pulps (beaten to 60°S.R.) showed breaking lengths of 10,900 and 8900-9500 m. and a folding endurance of 1471 and 2100-2744 double folds, respectively. The bleached pulps had permanganate numbers of 20-30 units, burst strengths of 6.2-6.8 kg./sq. cm., and tear strengths of 104-113 g. Bleached semichemical pulps thus exhibited properties making them suitable for printing and writing paper. Unbleached pulps (which can also be made from nonbarked wood chips) are suitable for board and wrapping papers. Chemigroundwood containing 14-15% lignin and 24% pentosans was obtained in 81-85% yield from whole birchwood chips by a 1-hr. treatment with sodium sulfite liquor (35-40 g. sodium carbonate/liter, pH 10-11, sodium sulfite: sodium carbonate ratio 4:1-5:1) at 170°C., followed by fiberization in a Hydrafiner. The impregnating liquor could be re-used 40-60 times. The pulps had breaking length of 8950-9050 m., a bursting strength of 4.4-5.2 kg./sq. cm., a tear strength of 80-81 g., and a folding endurance of 360-400 double folds. J.S.

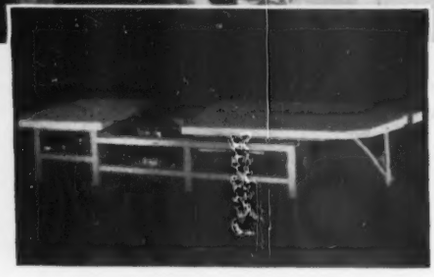
LAMB AIRFLOAT®

TABLES for Board & Paper Handling

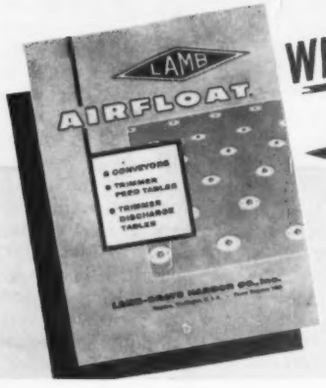
LOAD GLIDES ON FILM OF AIR!

Round insets in table top with spring-operated ball valves allow air to escape only when load depresses them—no air escapes from other valves on table.





Perfect for Conveyors, and for Trimmer Feed and Discharge Tables. Loads of paper keep their alignment—move feather-light, practically effortless, with no spoilage of bottom sheets by oil or moisture. Blower delivers air to fit size and weight of load. Rigid, lightweight framework. Tables can be arranged to fit practically any work need.



WRITE for LAMB AIRFLOAT folder that illustrates many arrangements and uses possible.

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PHONE: HOQUIAM 1000

NEW BECCO Cold Caustic Pulp Bleaching Process*

Requires No Additional Equipment

"BLEACH IT WHILE YOU MAKE IT!"

Buffalo, N. Y., December, 1958—The Becco Chemical Division, Food Machinery and Chemical Corporation, announced today a new technique for cold caustic pulp bleaching that requires *no* additional bleaching equipment. Bleaching takes place in the same equipment regularly used for the manufacture of cold caustic pulp.

In the new process, peroxide bleach liquor is added at the Bauer refiner, and bleaching occurs during the refining operation. Bleach response is dependent on refiner densities.

Up to 20 points brightness increase has been obtained in commercial operations to date. No additional steam costs are incurred, and the process requires no holding time. Chemical costs are not excessive, considering that the new process permits use of greater amounts of low-cost and more plentiful pulp, without capital investment for bleach equipment.

The process can be applied to all typical cold caustic pulps, and Becco is prepared to assist you immediately in setting up a production run and evaluating results. If you would like to have a Becco Technical Representative call, with no obligation on your part, write us at: Dept. PP-37.

*Patent Pending

Progress in Peroxygens

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Food Machinery and Chemical Corporation
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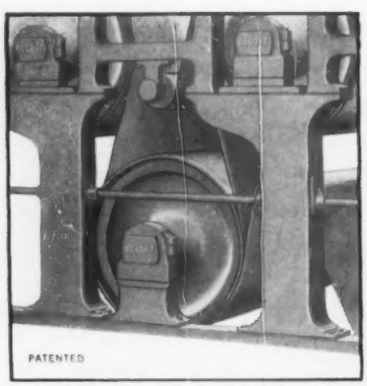
BELOIT UNIT MODERNIZATION

Is Drying Capacity equal to your

MODERNIZATION
WITH PROVED BELOIT UNITS
...CUTS COSTS
...INCREASES SPEED
...IMPROVES QUALITY

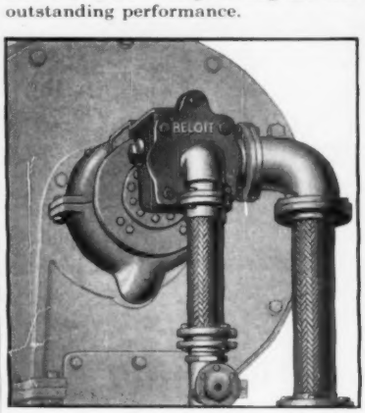


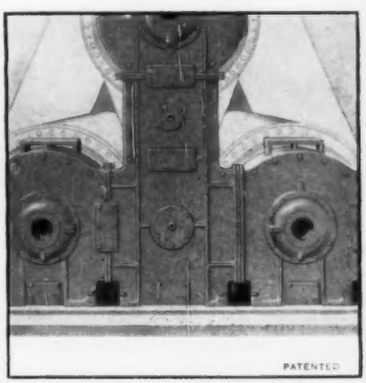
What makes a good dryer?

Experience, sound engineering principles, exacting quality control in the foundry and machine shop—all contribute to superiority. Beloit's advanced foundry and machining techniques bring papermakers a quality product at substantial savings. Beloit dryers are built for long life and trouble-free service. There is nothing that consistently transfers heat or doctors as well as fine cast iron.

Existing steam fits adequate?

Beloit steam fits have been proved in design through years of successful operation. The patented Beloit semi-balanced principle assures minimum wear on carbons and lower horsepower requirements at high steam pressures. Steam fits are a vital factor in efficient paper-machine operation. Rely on Beloit steam fits to give long life and outstanding performance.





Enclosed gear drive?

It's often a "fine line" of decision whether to keep an open-gear drive or convert to an enclosed gear drive. If your modernization program includes the latter, call on Beloit sales engineers to help plan the installation. Beloit enclosed gear drives offer these advantages: full-pressure lubrication, ease of maintenance, quiet running, safety, and operating cleanliness.

PROVED BELOIT UNITS FOR DRYERS: DRYER FELT ROLLS
SHEAHAN ROPE SYSTEMS WITH AUTOMATIC TENSION CONTROL
POST TYPE FRAMING • SWEAT DRYERS • TEFLON-COATED DRYERS
PAPER TENSION ROLLS • DOCTORS • FELT STRETCHERS

ONE OF A SERIES SHOWING TYPICAL BELOIT SOLUTIONS TO COMMON MILL PROBLEMS

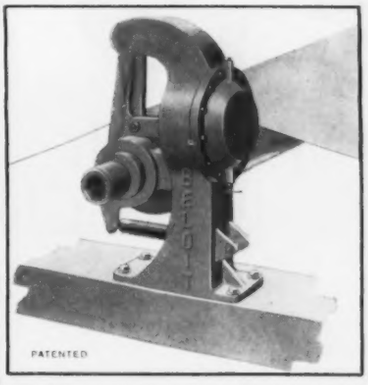
machine's PRODUCTIVE potential?

On an otherwise productive machine, allowable steam pressures often are a limiting factor. This usually can be solved without increasing the number of dryers by adding new dry-end dryers with increased steam pressure capacity. If a speed-up is anticipated, existing dryers often can be reconditioned to bring them into balance, and journals re-machined to accept anti-friction bearings. Where old journals are not suited for further machining, new heads and journals can be made to fit existing dryers. . . . Below are Beloit components that have proved to be of special value in dryer modernization. See where they fit into *your* modernization plans.

Condensate removal a problem?

Beloit offers several effective solutions to this problem. Beloit's syphons are designed to cover all ranges of operation insuring efficient elimination of condensate. In the majority of cases, kits are now available to convert your present system to a modern Beloit system. Take advantage of this opportunity to bring dryer efficiency up to desired levels.

PATENTS APPLIED FOR



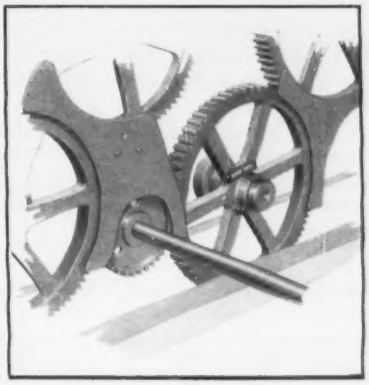
PATENTED

Felts running off periodically?

Faulty felt guides can cut production! Why not modernize with a low-cost Beloit automatic dryer felt guide now? The patented Beloit air diaphragm guide moves the guide roll smoothly, efficiently. Its rate of response is independent of felt speed; outside power supply and floating paddle reduce felt wear. The entire mechanism is simple, foolproof, rugged—requiring a minimum of maintenance. Models available for all dryer felt applications.

Open gears a problem?

If an anticipated speed-up program is being held back by your present open-gear drive, get the facts on Beloit dryer gears. Beloit's finely machined gears allow for that speed-up yet permit operation of an open gear arrangement. Call on Beloit to help work out the best arrangement to fit your particular needs.



» **ACT!** *Write for details —or let a Beloit Sales Engineer help you modernize your Dryer Section. Beloit Iron Works, Beloit, Wis.*

BELOIT IRON WORKS PAPER MACHINERY BELOIT, WIS. U.S.A.

BELOIT

PAPER MACHINERY

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NEW BAILEY
Multi-Pointer Gage

...has twice as many indicators
...no taller than a telephone!

Now the popular versatile Bailey Multi-Pointer Gage has been reduced in size to conserve control panel space—without loss of easy *readability*.

Each new Multi-Pointer Gage Unit offers you these three choices to—

1. Measure and indicate draft, pressure, differential pressure and level.
2. Transmit above variables either pneumatically or electrically to remote indicators, recorders and/or controllers.
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FEATURES

Compact Size—Two large, easily-read 7" scales in space only 4 inches wide.

Wide Range Selection—Standard ranges from 0-0.5 in. H_2O to 0-5000 psig available.

Choice of Standard Colors—Satin Black, Slate Gray, Moss Green, or Terra Tan may be selected as an exterior color at no additional cost.

Colored Scales—Scales available in white, red, green, blue, yellow, or orange.

Fluorescent Illumination—All gages have slideout unit containing bulb and starter for ease of maintenance.

Readily Accessible Adjustments—Zero adjustment made from front of gage. Other adjustments made from rear of gage.

Two-point Positive Mounting—Gage unit mounted with two clips . . . no holes to drill or studs to weld.

Unlimited Indications—Any number of basic two-indicator units may be placed side-by-side to provide indications of related factors. Each two-indicator unit is separately mounted.

For additional information, call your local Bailey District Office, or write us direct.

P47-1

Pulp and paper division

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In Canada—Bailey Meter Company Limited, Montreal

BAILEY METERS

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APPLETON WIRES ARE GOOD WIRES

Appleton Wire Works, Inc. • Plants at Appleton, Wis. and Montgomery, Ala. • International Wire Works, Menasha, Wis.

New Salem pipe line to augment present system will add approximately 50 MGD capacity to city water supply system.

a line of growth... for Oregon's capital city

American Concrete Cylinder Pipe is helping Salem, Oregon to grow

A simple but important fact is that no city, however great its potential, can grow beyond the capacity and dependability of its main water supply system.

Recognizing this fact, and envisioning a population in 30 years that will require three times the maximum capacity of present water transmission lines, Salem, the capital city of Oregon, is carrying out a program designed to meet future needs.

Under the direction of the City's Water Department Manager, John L. Geren, and the technical supervision of Consulting Engineers Clark and Groff of Salem, an 18-mile pipe line of 48" and 54" diameter American Concrete Cylinder Pipe is being installed by Lord Brothers, a general contracting firm of Portland, Oregon. This new line will triple the present capacity of the supply system.

The performance record of this type of reinforced concrete cylinder pipe has been so outstanding throughout the West that Salem can be confident that this water "growth line" will be giving efficient, economical service for many, many years to come.

Strength, permanence, sustained high carrying capacity, and trouble-free service are characteristics of American Concrete Cylinder Pipe which make it the right pipe for this forward looking city.

When planning your future water "growth lines," look to American's quality pipe line products, extensive production facilities and half century of experience.

Ask for complete information concerning the particular class of pipe that will meet your design requirements.

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SF announces:

PAPER PULP NOW AIRBORNE IN NEW FLAKT DRYER

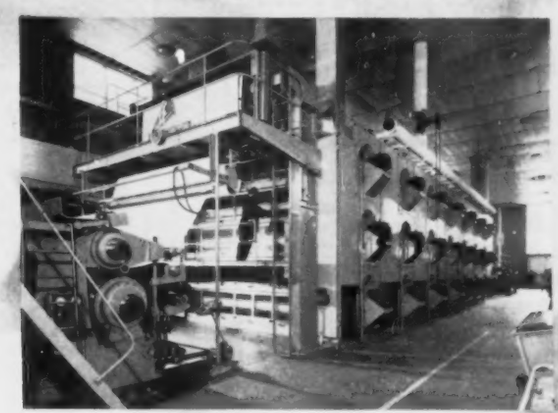
SF Flakt Dryer, Type L, introduces a uniquely advanced concept of paper pulp drying: working with hot air at atmospheric pressure, the type L Flakt Dryer features an air borne pulp sheet floating through the dryer without the help of any mechanical conveyor.

NEW: **INCREASED OUTPUT.** The type L Flakt Dryer can be built for larger capacities and higher speeds than earlier models.

NEW: **SMALLER OVER-ALL DIMENSIONS** save valuable floor space. The new air circulation system gives a considerably increased drying effect, thereby reducing the length of the unit.

NEW: **LESS MAINTENANCE.** The absence of a mechanical conveyor system saves man-hours spent on lubrication and maintenance. Expensive production gaps because of conveyor changes are eliminated.

NEW: **AUTOMATIC THREADING,** Flakt Dryer, Type L, can be provided with automatic threading.



SF Flakt Dryer, type L, with 11 decks, designed for drying 110 short tons of pulp per day from 45% BD to 90 BD. Main dimensions: length 55', width 20', height 18'. In operation at Oskarström Sulphite Mills AB, Sweden, since the beginning of 1956.

For further information, please write

AMERICAN SF PRODUCTS, INC.

420 Lexington Avenue, New York 17, N. Y.

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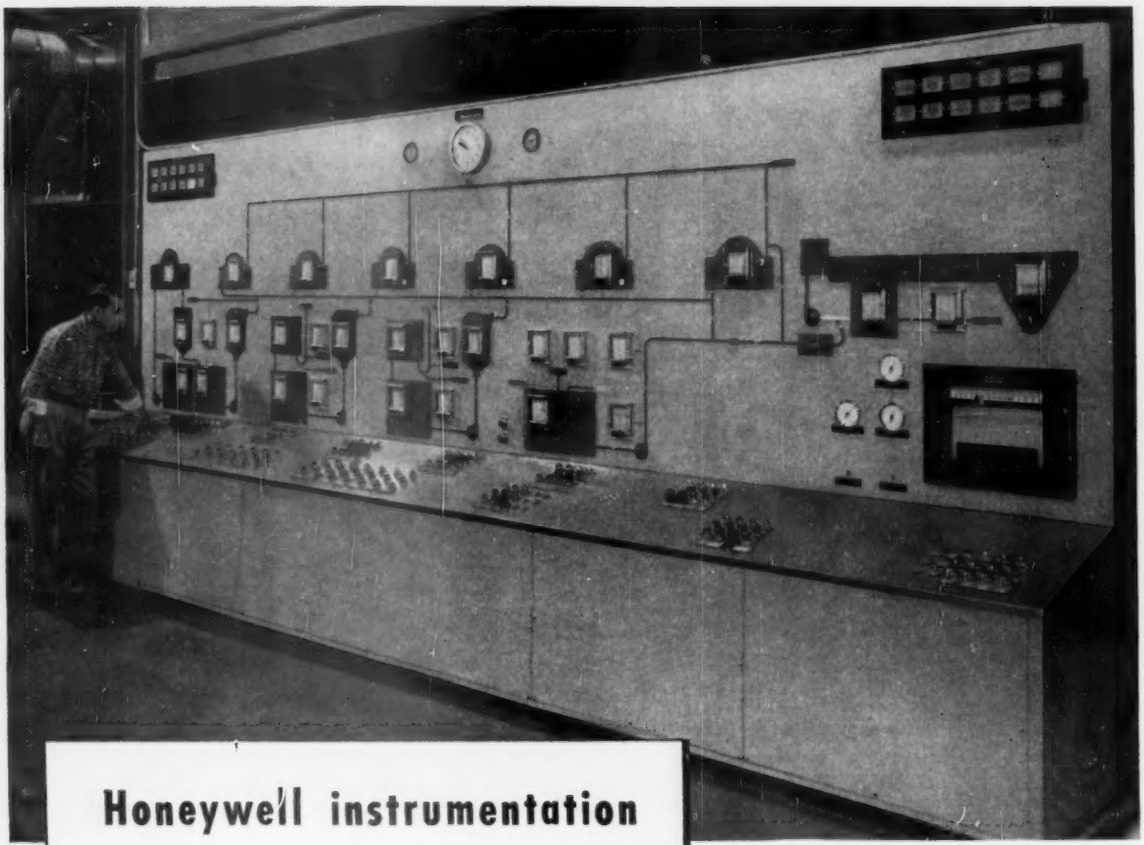


Honeywell instrumentation controls stock preparation for new *Clupak** paper

This custom-designed Honeywell panel controls stock preparation for the *Clupak* paper process. It also provides a constant measure of efficiency by recording the amount of power required to prepare each ton of stock.

When West Virginia Pulp and Paper Company recently developed strong, stretchable *Clupak* paper, it turned to Honeywell for the extremely accurate controls required to produce the new product. The custom-designed graphic panel shown above is part of the new system. It guides the stock preparation process with the especially critical accuracy demanded.

Other leading paper producers also rely on Honeywell for accurate, economical control of papermaking processes. Have Honeywell custom-fit a control system to the *exact* requirements of your own mill . . . for either present processes or completely new ones.

You'll save in purchasing, installation and maintenance by placing undivided responsibility for all instrumentation with this single, dependable source . . . the world's largest manufacturer of controls.

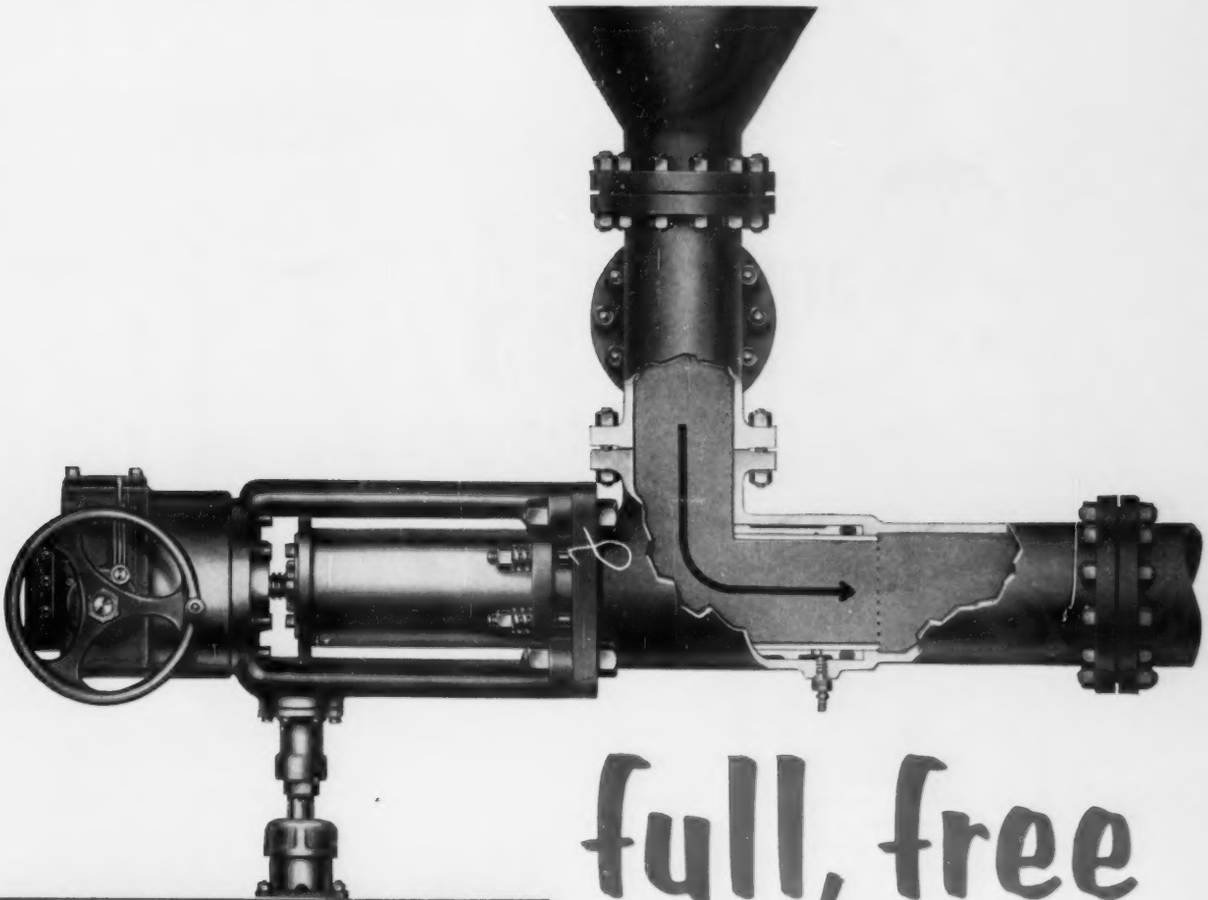
Get full details from your nearby Honeywell field engineer. Call him today . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL, Wayne and Windrim Avenues, Philadelphia 44, Pa.

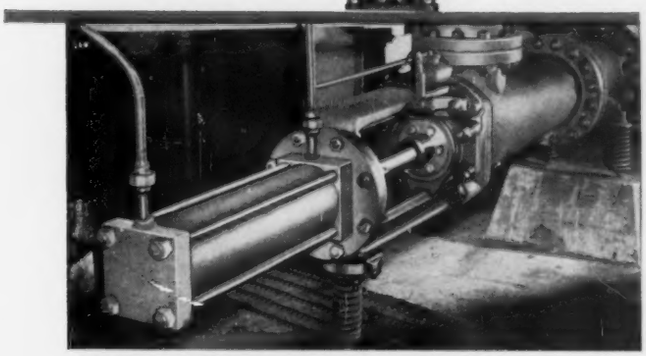
*Trademark of *Clupak*, Inc., a company organized jointly by West Virginia Pulp and Paper Company and Cluett, Peabody & Co., Inc.

Honeywell

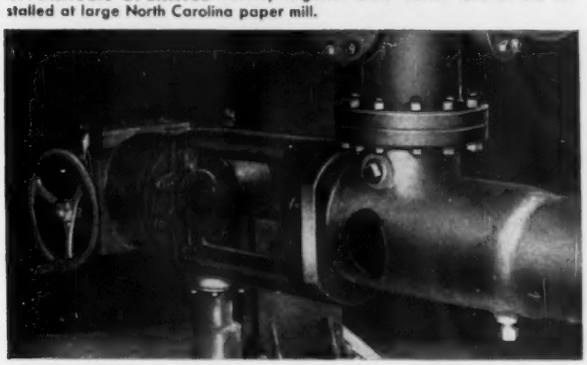
First in Control



full, free digester discharge



HYDRAULIC-OPERATED Yarway Digester Blow Valve—one of six installed at large North Carolina paper mill.



MOTOR-OPERATED Yarway Digester Blow Valve—one of eight installed at large Canadian paper mill.

Digesters blow fast and clean with YARWAY Seatless Blow Valves.

The hollow sliding plunger has no pockets where wood chips or tramp materials can hang up. *permitting fast discharge with minimum pressure reducing blowing time, increasing number of drop. Comparisons show more discharge area . . . cooks.*

Scores of pulp mills report *lower operating costs* and *increased production* due to YARWAY Digester Blow Valves. One large mill found *savings in operation and maintenance the first year more than paid the cost of their 4 new Digester Valves!*

YARWAY Seatless Digester Valves can be furnished either with electric motor or hydraulic cylinder units. Both are remote controlled. Bulletin B-441 gives the whole story. Write for it.

YARNALL-WARING COMPANY
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YARWAY . . . DIGESTER BLOW VALVES

arctic or tropic

POWELL

has the right valve!

Handling fluids at sub-zero temperatures or at super-heat – or any of the temperatures in between – is no problem if you install Powell valves. There is a Powell Dependable Valve to meet your most exacting flow-control requirements, no matter what the extremes of your needs.

The complete Powell line includes all types of valves in bronze, iron, steel and corrosion resistant metals and alloys, for pressures from 125 to more than 2500 pounds W.P. Consult your local distributor (there's one in most major cities) or write to:

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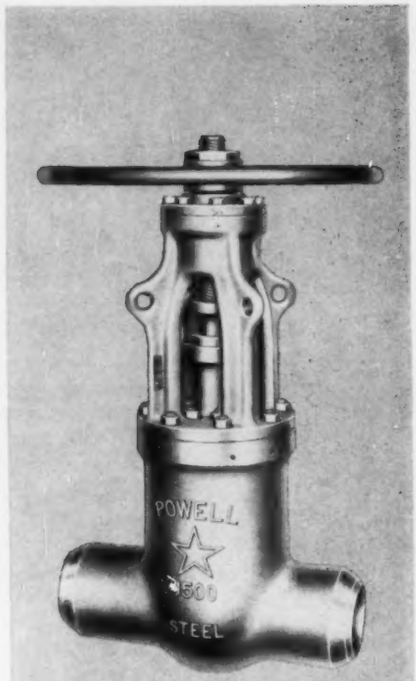

Fig. 11303 W. E.: Steel O. S. & Y. pressure seal gate valve for 1500 pounds W. P. at high temperatures. Powell pressure seal valves are available for working pressures from 600 through 2500 pounds.

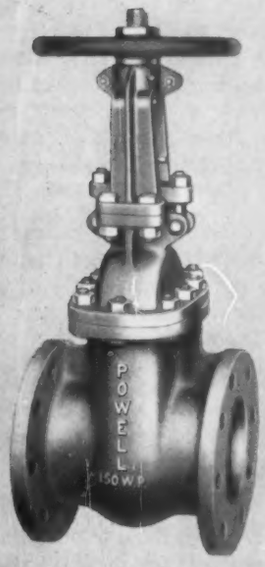

Fig. 2453G: Large 150 pound stainless steel O. S. & Y. gate valve for low temperature service. Can be furnished with interchangeable solid or double wedge disc.

Fig. 86190: Steel union bonnet globe valve for 400 W.O.G. Designed for liquified petroleum gas service.

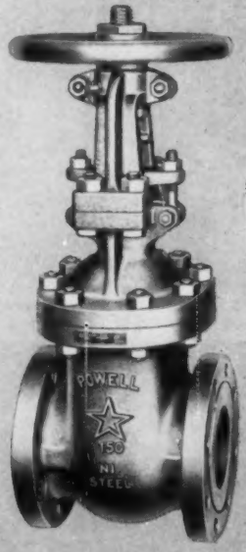

Fig. 1503 Mod.: 3½% Nickel-steel O. S. & Y. gate valve for low temperature service.

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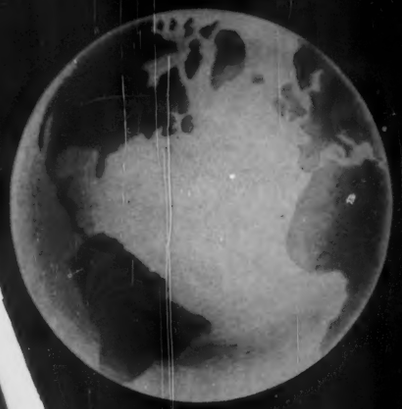

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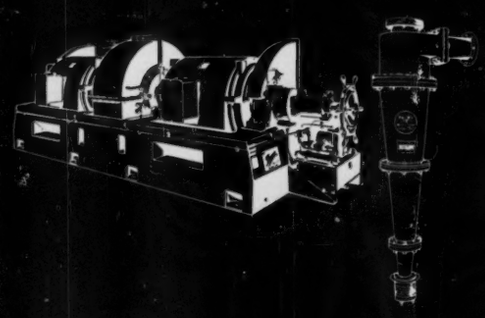

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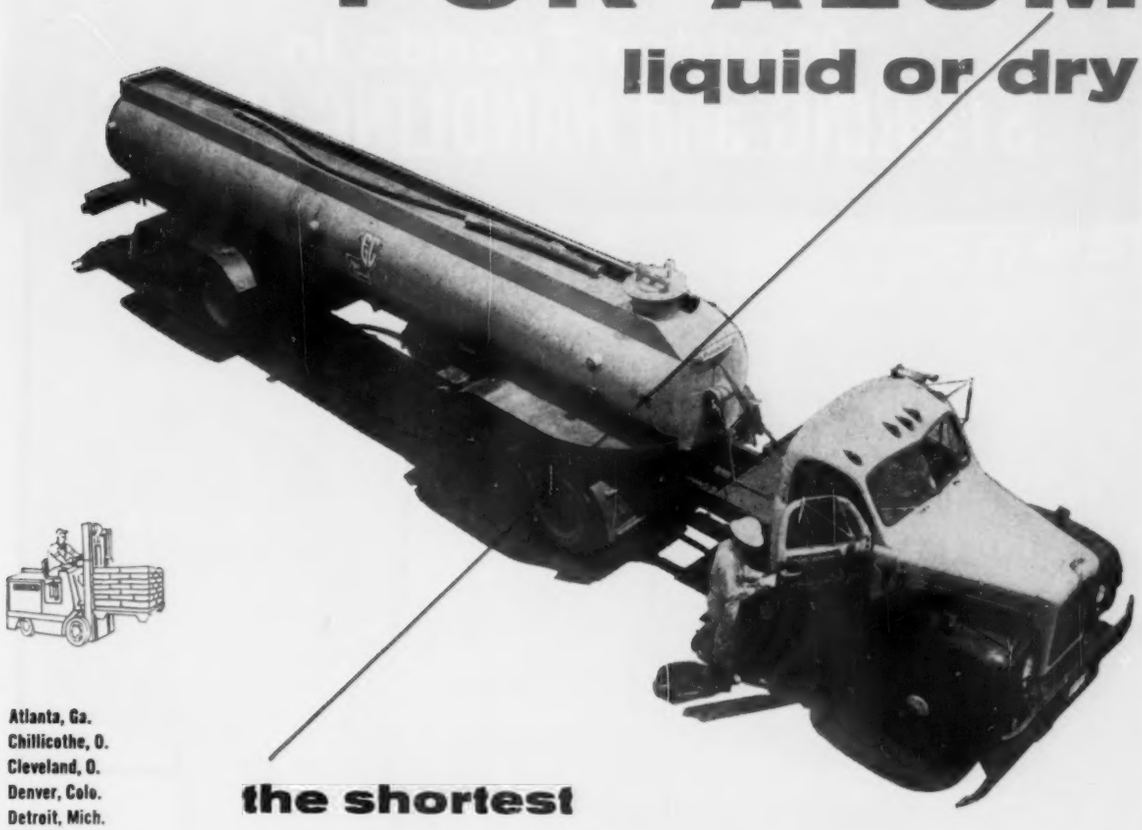

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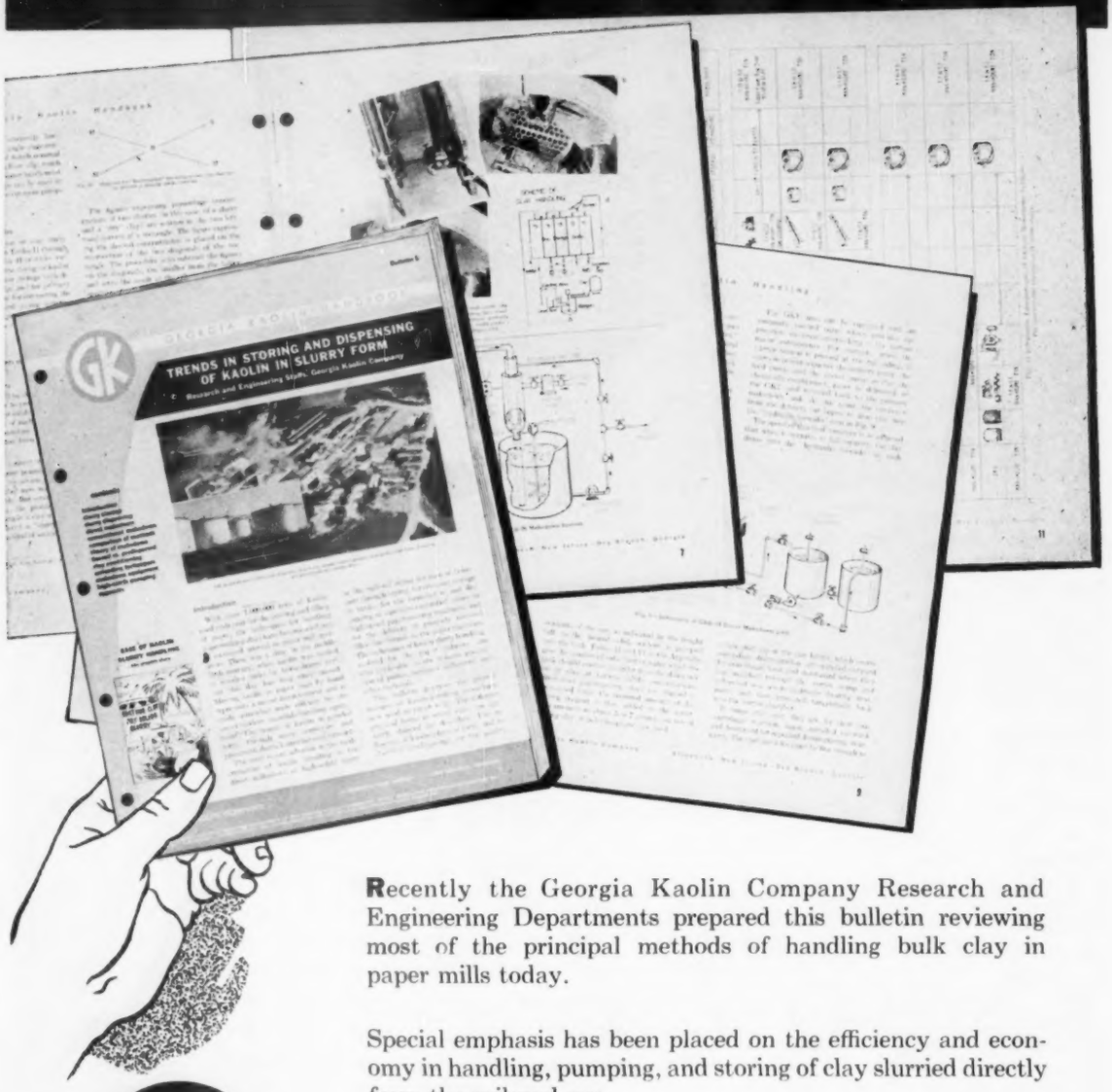
Modern Trends in STORING and HANDLING CLAYS



Recently the Georgia Kaolin Company Research and Engineering Departments prepared this bulletin reviewing most of the principal methods of handling bulk clay in paper mills today.

Special emphasis has been placed on the efficiency and economy in handling, pumping, and storing of clay slurried directly from the railroad car.

Paper mill engineering staffs studying the expansion or modernization of their bulk clay handling plants will find the charts, tables, and data contained in this bulletin very useful in planning their future systems.

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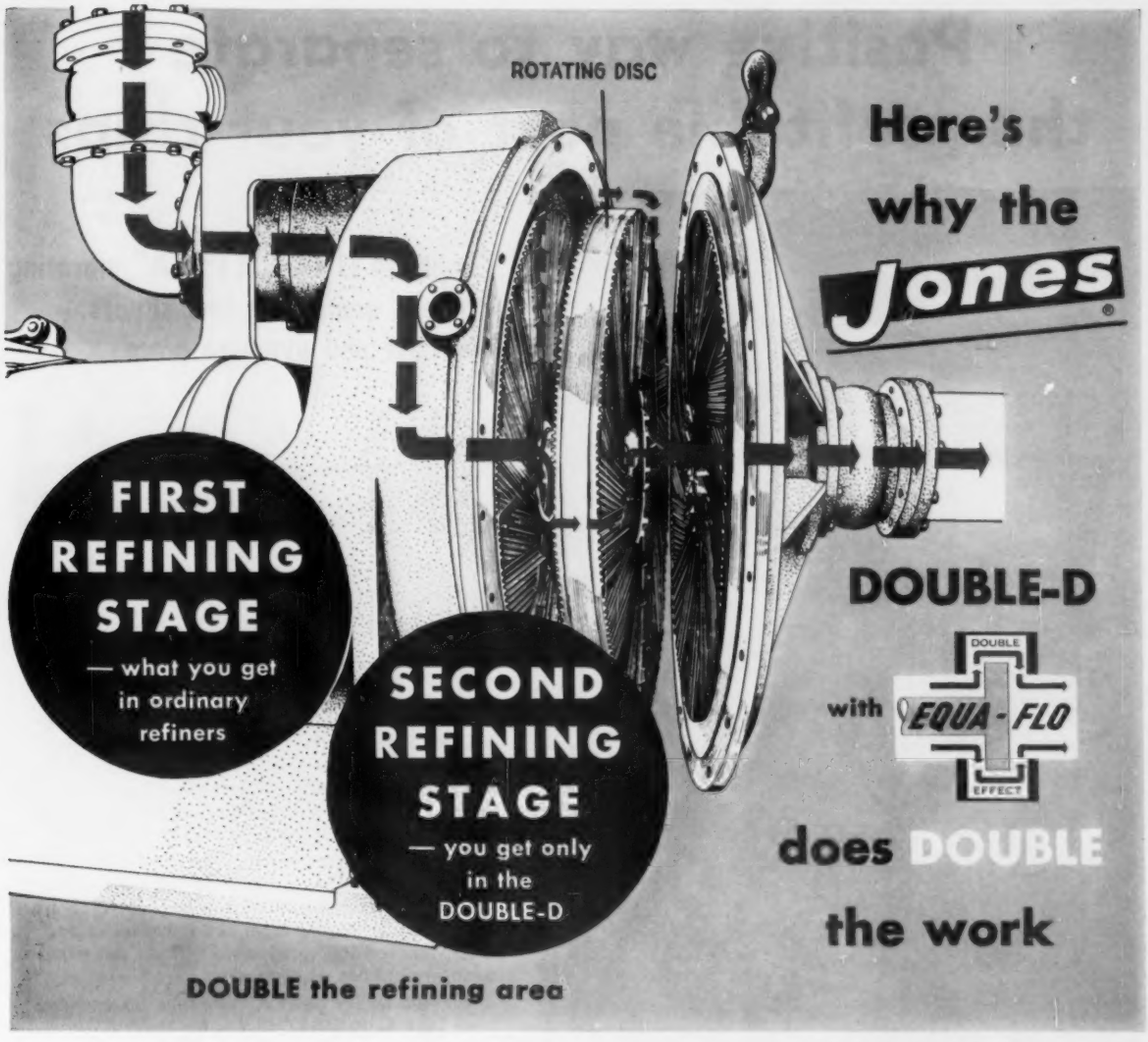

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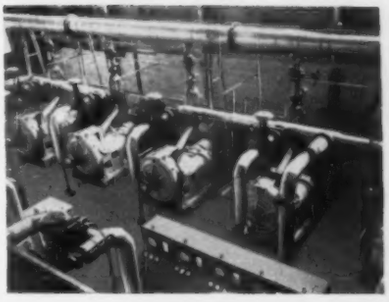

A typical installation - some of the 10 DOUBLE-D's at St. Regis Paper Company's Jacksonville plant. Note the piping - as simple as a Jordan's.

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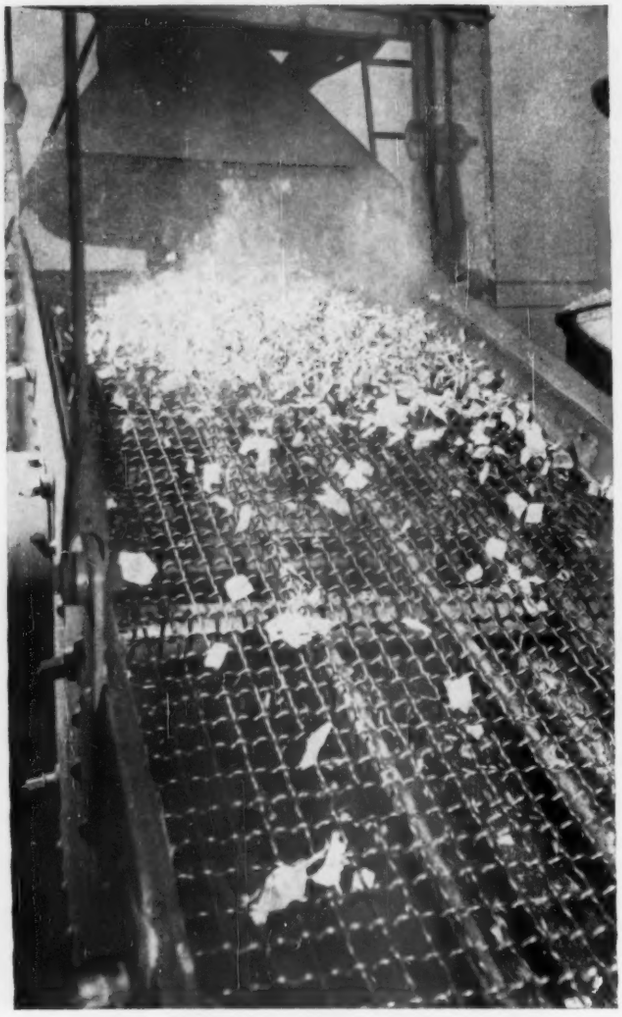
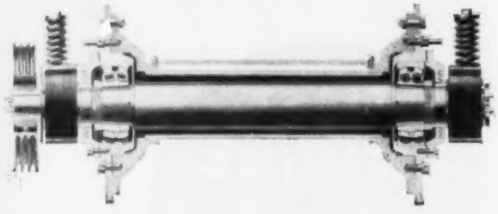


LINK-BELT "CA" double-deck vibrating screen separating oversize chips, slivers and sawdust from wood chips. Note the full loading and rapid clearing of the top deck. This screen can handle up to 2000 cu. ft. of chips per hour.

Powerful LINK-BELT "CA" vibrating screens accurately sort slivers, sawdust and oversize pieces



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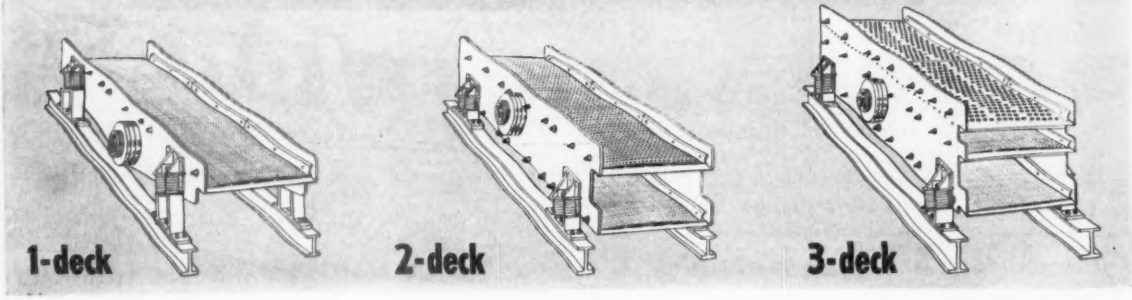

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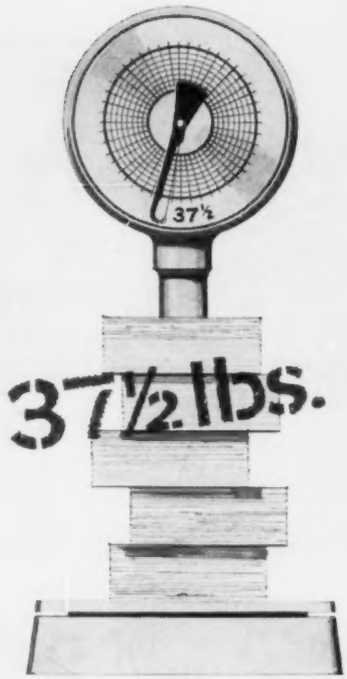

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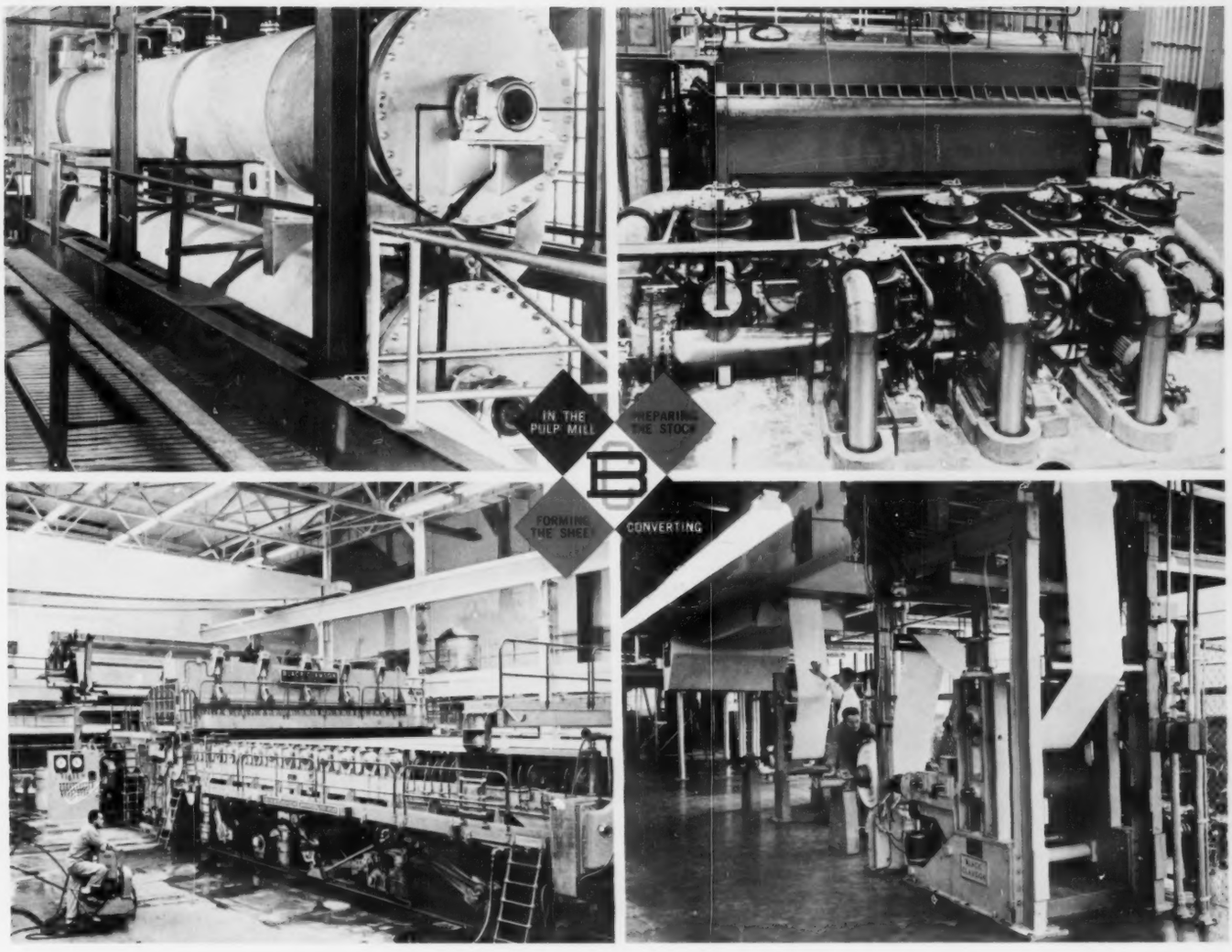

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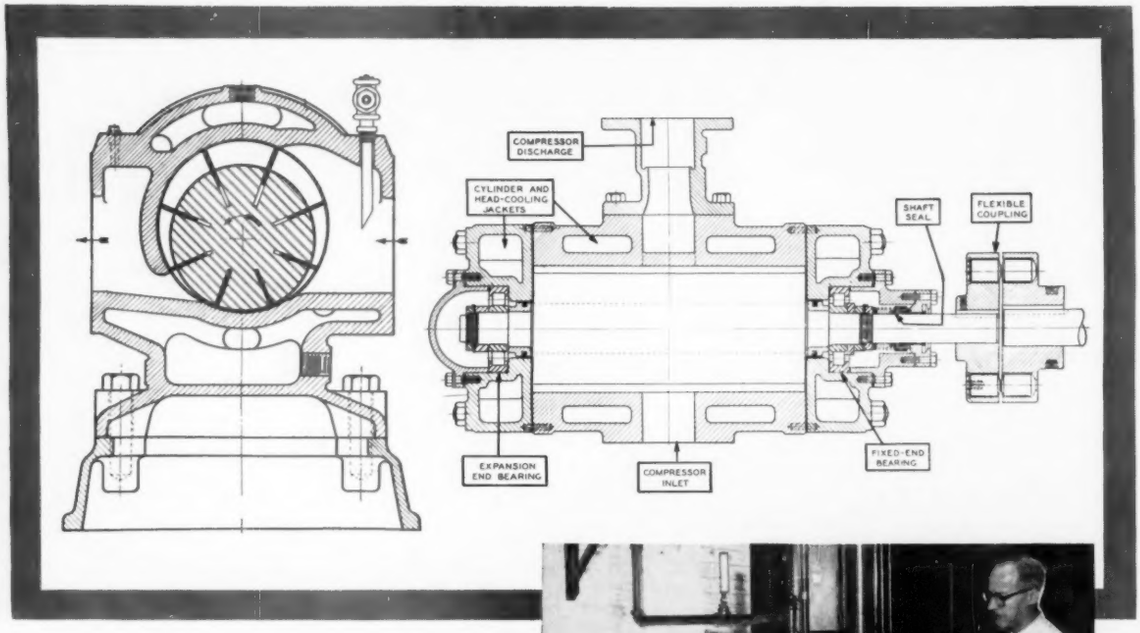

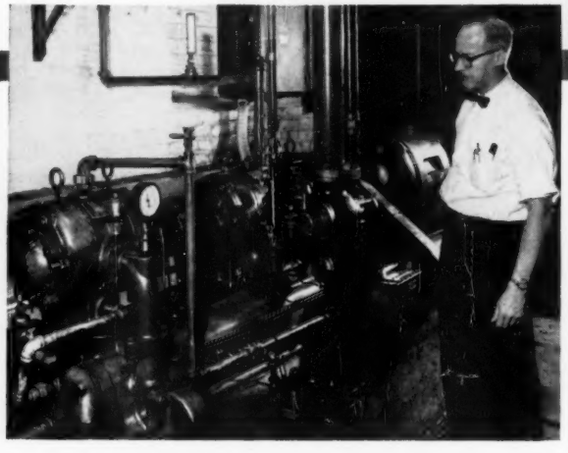

Hard service never affected this Fuller rotary's original output—230 cfm. of air at 90 lb. G., reports Mr. Schott, chief engineer, Thomas C.Wilson, Inc., Long Island City, N.Y.

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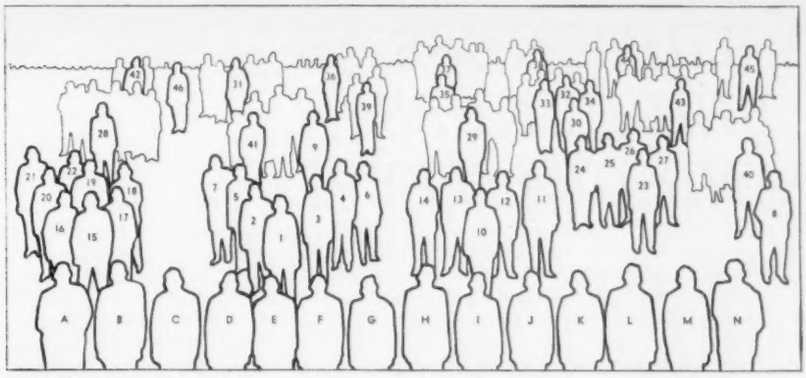

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World Paper Use to Double

in 17 years, on basis of FAO-UN projection, providing growth trend continues at minimum rate. Could go even higher.

—Rome, Italy

1. Worldwide consumption of pulp and paper products will double in approximately 17 years, on the basis of long term trends.

2. Well over 90% of the world's paper and paperboard production depends on wood as the primary fibrous raw material supply, and only minor changes in the supply pattern are likely to occur during this period.

3. Woodpulp production is likely to rise to some 100 million (metric) tons by 1975.

4. Present pulpwood production will thus have to be virtually doubled to over 400 million cubic meters per year, mostly in North America and Europe.

These are conclusions of the Forestry Division, Food and Agricultural Organization, United Nations. Some of these results of its survey were headlined in New York newspapers as "forecasts." Editors of PULP & PAPER and PULP & PAPER INTERNATIONAL decided to check directly with M. Leloup, director, Forestry Division, in Rome.

Could Go Higher

He explained that the "forecasts" are actually projections based on an assumption of an annual increase of only 4% in the coming 17-year period, whereas the FAO survey said "it seems reasonable to assume that world consumption of pulp and paper products will continue to grow at a minimum rate somewhere between 4% and 6%. Given a development of the world economy more favorable than was experienced in the period between the two world wars, the annual consumption increase may well exceed the *higher* of these two figures."

Mr. Leloup, however, told this magazine that these projections were more of "a tool for exposition purposes, but before launching any definitive forecasts on the world, we would like to refine our methodology and be able to submit valid arguments. These long-term projections are not a simple matter."

Nevertheless, the FAO statements, published recently in its magazine *Unasylva*, are not out of line with comparable forecasts made for the United States by the U.S. Forest Service, U.S. Department of Commerce and Stanford Research Institute, Stanford University. The widely discussed Stanford report is revised upward, projecting an annual increase of 4.9% instead of 3% up to 1965, for the United States only. The Dept. of Commerce projects annual increases averaging 5.3%. The 1975 forecasts of U.S. paper and paperboard production are: 51,000,000 short tons (U.S. Forest Service), 46,600,000 (Stanford Research), and 45,000,000 (in 1952, by President's Materials Policy Committee), which compare with 30,700,000 tons in 1957.

The FAO/UN surveys have been on the conservative side. Forecasts which were made by one such world production and consumption survey for the 1950 decade was exceeded about midpoint—1956—and the growth in paper and paperboard consumption rose 6.3% a year instead of the predicted 3.3%. Europe's growth was 2.5 times the forecast and North America's increase was 70% higher.

Some other highlights of this new report: The post-American recession years will now see the long-term trend reassert itself with demand steadily growing and difficulties arising in satisfying world needs. Since coniferous resources are scarce in pulp and paper deficit areas, imports of newsprint and coniferous pulp will continue to climb. U.S.S.R. has increased production 3.5 times since 1947. Asia has made "remarkable progress" in pulp, especially bamboo. But Japan and India are short of raw materials and industrial expansion is falling behind potential demand. In Latin America, the resources picture is bright but capital is short. Africa and Oceania have expanded pulp production to keep pace with demand.

Feldmühle Travelers Predict Europe Growth

—Chicago, U.S.A.

Paper and paperboard production in Europe will grow in the future at a higher percentage rate than in the United States. Principal reasons: The Common Market and per capita consumption, which has long way to go to catch up with U.S.A.

This prediction is made by three officials of the Feldmühle Papier und Zellstoffwerke AG, Düsseldorf-Oberkassel, West Germany, one of Europe's biggest producing companies. They are Heine Feldmann, financial vice president; Dr. H. Kleine Arndt, head of the business administration division, and Dr. Heinrich J. Klein, chief economist and head of the economic division.

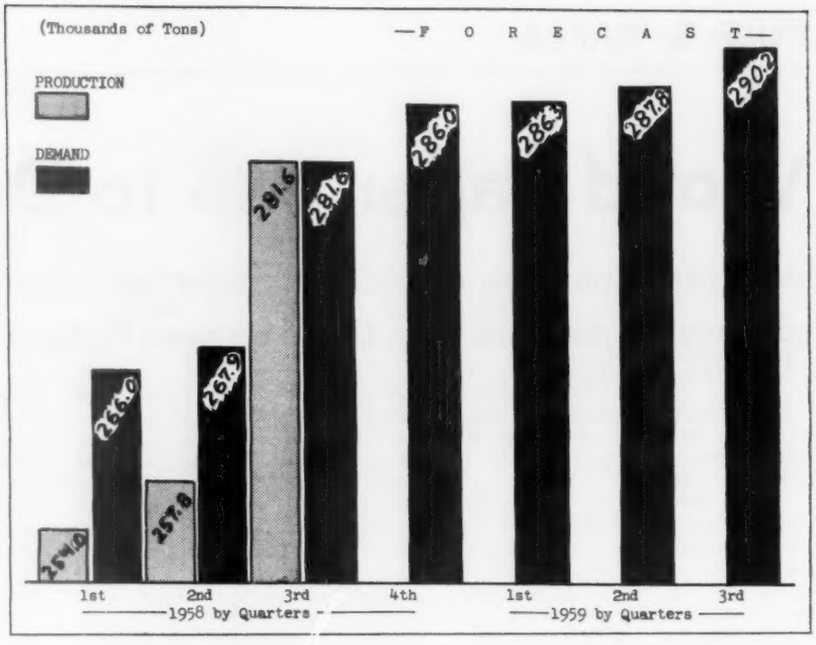
West Germany, they said, has made a 25% reduction in all imported goods as of Aug. 1957, and under the terms of the Common Market agreement for gradual reduction of tariffs among the six participating countries, the other members of the market group will be reaching the German tariff level by reductions over the next four years.

The German officials said the German people, as a whole, are very favorable to the Common Market, but they are divided in opinion as to the Free Trade Area, whereby all other countries outside the group would likewise benefit by the lowered tariffs.

In their travels in the U.S.A., the Feldmühle executives observed two trends:

1. They are trying to build more export business, especially in pulp, on long term contracts in Europe.

2. American paper mills and converters are interested in establishing subsidiaries in the Common Market area, behind tariff walls, in combination with existing European industries.



PAPERBOARD DEMAND SURGES UPWARD—
Weekly average (seasonally adjusted) U.S. paperboard production and demand, prepared by PULP & PAPER from data from National Paperboard Assn. and Econometric Institute.

Paperboard on Way to New Records

Forecast for 1959 is 15 million tons; 1958 may also break records. NPA President Kennedy, however, warns of overexpansion.

● A much more optimistic tone prevails today in paperboard—and with good reason. The industry has not only weathered the 1958 recession storm but has actually emerged stronger than ever. As re-elected NPA President Jack R. Kennedy expressed it, the industry has reached industrial maturity.

Once the worst of the recesssion was over, paperboard started to move up the percent-of-activity ladder and by the end of November was operating at a cumulative rate of 87%. Significant is that by November the industry had topped the 300,000 ton weekly production mark more than 10 times. Commented NPA Assistant Statistician Warren Wescott, this has happened only five times previously.

In a year when some industries would have been content to maintain 1957 operating levels or close to it, some segments of paperboard reached out for new records. Containerboard, which had been at times at its lowest level, scored a record-breaking 168,800 tons at week end of November 1. Foodboard too, another growth item, was expected to set new records for 1958.

This was the optimistic atmosphere at the 26th annual meeting of the National Paperboard Assn., Nov. 10-12 at the Waldorf-Astoria in New York. And the leaders were in an even happier mood as they adjourned. Reason: the outlook for 1959 was better. Demand for paperboard was expected to rise 5%, with total production at 7% above 1958.

Some Possible Dangers

As might be expected, there are some clouds on the horizon. There is the danger that flush with success, the industry may be tempted to plunge again in dangerous waters of expansion. "It is not possible," explained and at the same time cautioned President Kennedy, "to produce a new ton of capacity at precisely the same moment with demand."

"Political responsibilities cannot be attended to by proxy," stated Donald J. Hardenbrook, chairman of the board, American Creosoting Corp. and vice president and director, Union Bag-Camp Paper Corp.

George Sokolsky, the syndicated columnist, discussed Soviet Russia and said it could move into "our markets and undersell us."

Additives Law Will Keep Industry Busy

"We are going to be busy with the passage of the Food Additives Law passed in Sept., 1958," remarked Keith W. Max, chairman, NPA's biological research committee and manager of research and development of the Robert Gair Products Paper Group of Continental Can Co. "It will be an important law for us—particularly the administration of it."

It was a lawyer, however, who provided some interesting details—Malcolm K. Whyte, NPA counsel. Here are high points of his talk:

Since 1905 the nation has always had laws which prohibit putting harmful drugs into food. Nowhere is there the suggestion that packaging ever made anyone sick.

In the new law the burden of pre-

ITEM	Total	CONTAINERBOARD								BOXBOARD			
		LINER		CORRUGATING MATERIAL									
		Culinder Kraft	Fourd. Kraft	Jute	Kraft	Semi-chemical	Straw	Other	Container Chip & Filler Bd.	Folding	Set-Up	Bleached Boards Inc. Spec. Food Bd.	All Other
CAPACITY IN EXISTENCE OR UNDER CONSTRUCTION													
Capacity End of 1957	16,729	181	4,659	1,163	131	1,833	259	531	322	3,171	743	1,477	2,259
1958													
New Machines	558	—	71	—	—	55	—	94	—	44	—	294	—
Improvements	177	–4	208	–119	–1	12	11	27	—	–13	–8	–29	93
Capacity End of 1958	17,464	177	4,938	1,044	130	1,900	270	652	322	3,202	735	1,742	2,352
Daily Capacity End of 1958	55.80	.57	15.78	3.34	.41	6.07	.86	2.08	1.03	10.23	2.35	5.57	7.51
1959													
New Machines	28	—	—	—	—	—	—	—	—	—	—	28	—
Improvements	125	–5	20	1	–1	31	1	5	2	27	1	42	1
Capacity End of 1959	17,617	172	4,958	1,045	129	1,931	271	657	324	3,229	736	1,812	2,353
Daily Capacity End of 1959	56.28	.55	15.84	3.34	.41	6.17	.86	2.10	1.03	10.32	2.35	5.79	7.52
1960													
New Machines	—	—	—	—	—	—	—	—	—	—	—	—	—
Improvements	20	—	20	—	—	—	—	—	—	—	—	—	—
Capacity End of 1960	17,637	172	4,978	1,045	129	1,931	271	657	324	3,229	736	1,812	2,353
Daily Capacity End of 1960	56.35	.55	15.91	3.34	.41	6.17	.86	2.10	1.03	10.32	2.35	5.79	7.52
ADDITIONAL POTENTIAL CAPACITY INCREASE													
1959													
New Machines	157	—	31	—	—	63	—	—	—	—	—	63	—
Improvements	126	—	25	6	—	18	—	13	1	28	2	13	20
Daily Capacity–1959	.91	—	.18	.02	—	.26	—	.04	.01	.09	.01	24	.06
1960													
New Machines	296	—	78	—	—	78	—	—	—	47	—	47	46
Improvements	199	–5	7	3	—	32	—	13	1	31	5	101	11
Daily Capacity–1960	1.58	–.02	.27	.01	—	.35	—	.04	.01	.25	.02	.47	.18
Total Increase '59-'60	778	–5	141	9	—	191	—	26	2	106	7	224	77

Survey of U.S.A. Paperboard Capacity by Grades 1957-1960
(313 day basis—in thousands of tons—by National Paperboard Assn.)

testing is put on the packager. Mr. Whyte remarked "we have this new law to remedy the emergency of no one ever being made sick through a package." He wryly suggested that perhaps the lawmaker's attention should be turned to 40,000 killed and 1.4 million people injured annually by automobiles.

The burden of proof is on the board manufacturers to prove their additive is not harmful. If a manufacturer has a food additive that he thinks has to be tested, he has to submit an application and tests begin. Estimates of the cost of testing range from $40,000 to $100,000.

There is a three way test: how many overdoses will kill half the number of rats being tested in 24 hours; then a 90-day test of sub-acute doses; and then a test for chronic toxicity to run two years–the life span of a rat.

The industry may have to do a lot of skin testing due to a last-moment cancer clause. Authors of the law seem to be "alarmists and extremists to the nth degree," remarked Mr. Whyte.

But Mr. Whyte cautioned the industry not to run out and hire staffs of technicians to test their products. There is a "grandfather clause" excepting anything used in food based on common use that has proven to be safe, e.g. sugar. In other words, anything that has been used in the board industry for the last 10 years would be safe. Mr. Whyte cautioned his audience not to change from an additive now in use to one that is cheaper because he may lose this protection.

Economic Prospects Spur Paperboard

By PETER W. HOGUET
President, Econometric Institute, Inc.

(Excerpts from talk at NPA meeting in New York)

The issue of the recession is over and a sharp recovery has already been made. There will be a steady improvement in corporate profits for 1959, which rose slightly in the second quarter of 1958. They will bounce right back to $22 billion (after taxes) in the first half of 1959.

These gains forecasted by the Econometric Institute are due to higher levels of sales as well as improved profit margins and lower unit labor costs expected in the second half of 1958 and some price increases. As a result unemployment will continue to drop.

Higher levels of industrial production and higher levels of employment will mean not only higher payrolls and higher consumer purchasing power but also a consequent strong demand for consumer goods. Wage increase for 1959 will be about 4½% and will continue to bolster levels of disposable income. Gains in wages will be offset by higher prices. The cost of living index is expected to rise to 126 by the third quarter of 1959. Now at 124, it was 117 two years ago.

Consumer credit will go up substantially–9½% to 10% to $48.4 billion by September of 1959.

Consumer Non-Durables–This is the largest market for paperboard and comprises textiles, leather and clothing, tires and paper goods and is likely to rise in 1959. Consumer perishables account for about 45% of paperboard demand and consumer semi-durables about 32%.

Consumer Durables–This is the next most important market for paperboard and accounts for about 9% of

total paperboard demand. Consumer expenditures for durable goods will rise from the 1958 level of $37 billion to $41.5 billion for furniture, automobiles, etc. Sales of almost six million cars are likely in 1959.

Paperboard Demand

Paperboard production from 1958 to 1959 will probably increase more than the 5% gain expected in end-use demand. This larger gain in production in 1959 will reflect the influence of inventory liquidation in 1958.

Containerboard demand is expected to move up during the coming four quarters to 150,000 tons/week, about 4% above the year-earlier figure of 144.4 thousand tons.

The rising trend of new uses for total folding boxboard will add further tonnage. Folding box shipments may reach 54,000 tons/week by 1959 third quarter, up from 52,000 tons for third quarter of 1958.

An important growth market for folding boxboard made from waste paper is the multipack carton (soft drinks, beer, and more and more canned and bottled goods). Soft drink output is rising. Special foodboard demand has increased considerably. A new high was set in the third quarter of 1958 with 25.5 thousand tons/week up from 23.7 thousand in 1957.

Expect a generally rising trend in the next four quarters.

"Qualifiers" Are Key To Capacity, says Newburg

"We have a lot of factors that look good," said Al Newburg, NPA statistician. In presenting his report on paperboard capacity he spoke of several "qualifiers."

The industry has machines that produce both paper and board—fluctuating machines, explained Mr. Newburg. In addition, there are "some doubters" in the list of potential capacity increase.

An interesting point underscored by Mr. Newburg is that the industry has never used its machines more than 99% in any one calendar year; that 1947 was actually the best year for "running our machines—99%"; 1955 was 96%; 1958 about 86% and October of 1958, 94%.

Some Grades Skid

Four grades actually had less capacity in 1958 than in 1957: cylinder kraft, jute liner, kraft corrugating medium and set-up. Container chipboard may be considered a fifth, with just about the same capacity.

Special foodboard and Fourdrinier kraft will be the big gainers.

"We have new capacity to take care of seasonable demands for this industry. Remember capacity is counted as at the end of the year (in other words, if a machine comes into production in December, its production potential is included in the whole year's total). We look pretty good. We have to do a good sensible job of marketing," he concluded.

1958 Production Performance of Paperboard

"We have started to move up," said Warren F. Wescott, assistant statistician, NPA, "and today we report an increase in demand and production with some new record highs."

Important points in his report:

There has been a substantial rise in demand since June. October set record for orders received. Containerboard showed a 68% increase over first quarter of 1958; boxboard was up 4 3/10%. Boxboard for the first 10 months was relatively good and may set a new record.

Foodboard, one of the growth items, was good and may also set a new high. Containerboard which has been at times at the lowest level, recently produced hit 168,800 tons/week—a record.

The business upturn will continue in 1959.

Trends in Packaging

Lloyd Stouffer, editor of *Modern Packaging*, told the NPA that packaging is a $16 billion market using 115 billion folding cartons and 11 billion corrugated boxes with a combined converted value of $2.5 billion.

"The perfect folding carton," he said, would eliminate the inner liner and the overwrap would have a printed appeal surface. It would be reusable and re-closable with an on-the-machine clay coating (two side and double coated) to add to the eventual function.

Liquid seal type of folding cartons are being used in Europe, he reported.

The 3-M company is now using a folding box lined with polyethylene for motor oil—a replacement for tin cans that combines in one package all the protection needed for this product. Market is two billion packages a year.

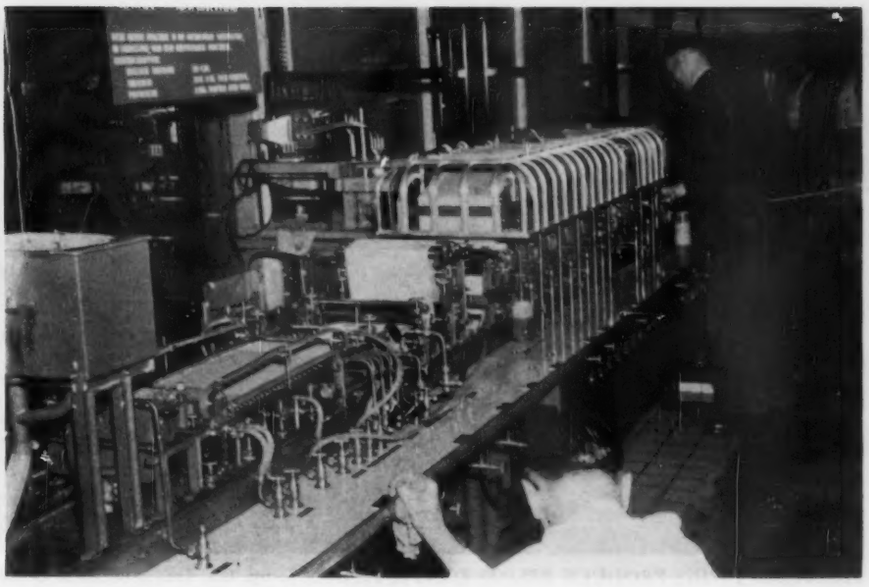
Thermaseal cartons are on the market. This is a product of Lowe Paper Co. using polyethylene boxboard with starch adhesives.

Representative Pulp and Paper Companies Sales and Earnings—Nine Months 1958

	Net Sales (000)	Income Bef. Taxes (000)	% of Sales	Net Income (000)	Net Per Share
MARKET PULP (Also Lumber, etc.:)					
Puget Sound Pulp & Timber	$ 17,672	$ 4,442	25.1%	$ 2,134	$ .31
Rayonier Inc.	78,293	3,973	5.1	1,729	.31
Weyerhaeuser Timber	304,639	58,607	19.2	36,647	1.21
NORTHERN INTEGRATED COS.:					
Diamond Gardner	125,461	n.a.	—	5,321	1.39
Glatfelter, P. H.	16,544	2,700	16.3	1,203	3.22
Great Northern Paper	39,804	711	1.8	326	.08
Hammermill Paper	34,398	2,755	8.0	1,414	1.24
Oxford Paper	45,633	3,845	8.4	1,818	1.44
Warren, S. D.	45,236	n.a.	—	2,416	2.21
INTEGRATED—NORTH & SOUTH:					
Container Corp. of America	191,878	22,183	11.6	10,693	1.00
Crown Zellerbach	346,007	42,623	12.3	23,440	1.63
International Paper	677,785	94,962	14.0	48,000	3.71
Riegel Paper	45,068	3,848	8.5	2,056	1.57
St. Regis	261,144	25,196	9.6	12,733	1.52
Scott Paper	210,720	31,648	15.0	15,938	1.98
Union Bag-Camp	114,888	23,017	20.0	10,792	1.47
NON-INTEGRATED PAPER COS.:					
American Writing Paper	n.a.	982	—	471	1.74
Sutherland Paper	46,289	3,593	7.8	1,726	1.60
CONVERTER:					
Dennison Mfg.	28,438	2,749	9.7	1,378	2.10

n.a.—Not Available

The sales and earnings for the Nine Months of 1958 were especially prepared for PULP & PAPER by Cyrus J. Lawrence & Sons, members New York Stock Exchange, from statistical services and published reports. While the figures are believed to be correct, no guaranty is given as to their accuracy.



OF MUCH INTEREST to visitors to Paper and Graphic Arts Pavilion at Brussels World's Fair was this model papermaking machine.

Many Learned About Paper at Brussels

By WILLIAM F. BOKS
Administrator, Gross & Irgens
(Pulp and Paper)

Pictures accompanying this story were taken by two Brussels Fair visitors, author William F. Boks and PULP & PAPER'S sales manager Ralph R. David.

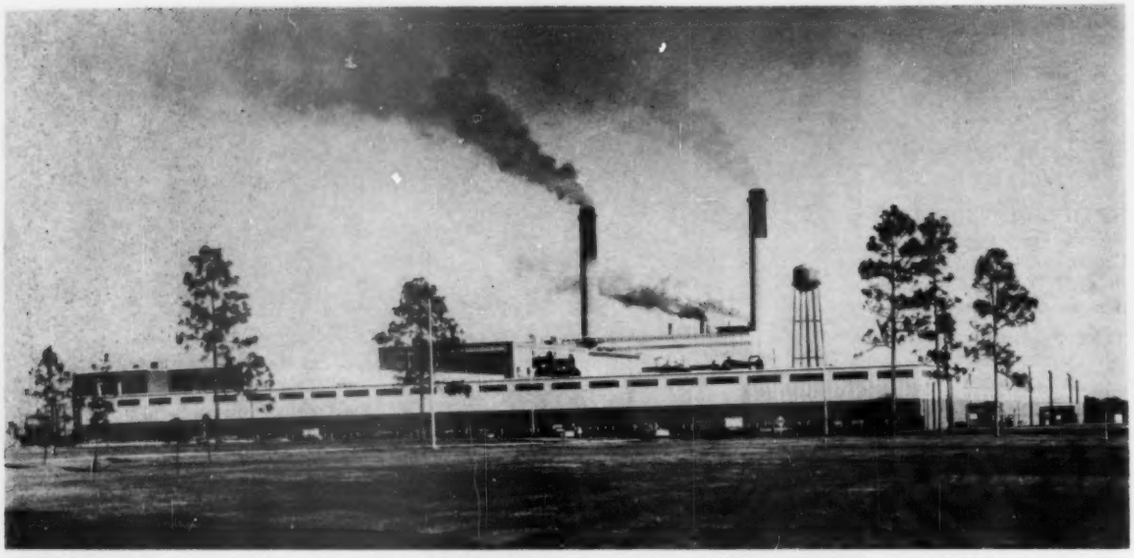
The Brussels World's Fair attracted large crowds this year and was a tremendous success right from the start.

The Paper and Graphic Arts Pavilion was one of the popular places for visitors to see and did much to further the knowledge of the industry among the thousands who streamed through the fair grounds and buildings.

This Pavilion featured exhibits of the many uses of paper. Also a pilot paper machine, a bag machine, and other equipment, including printing presses and exhibits from related industries.

A 14th century paper mill, reproduced in full size and true to life down to the last detail, was one of the most popular attractions at the Paper and Graphic Arts Pavilion. The equipment was taken from a French paper mill in Auvergne, established in 1326 and scrupulously maintained and operated in its medieval state as a museum. One man operates the entire mill and a water mill provides the only power to drive the hollander in which pure rags are beaten to pulp without the use of any chemicals. The pulp is put in a barrel and stirred by hand with a pole. A skilled workman dips a form in the barrel, takes out just the right amount of pulp, lets water flow through the mesh, then puts the resultant sheet of paper between two pieces of felt. Felts and paper are pressed in a wooden hand press and dried on ropes.

14th CENTURY MILL is reproduced at Brussels Fair: (1) Exact amount of pulp for sheet taken from stirring barrel; (2) Sheet is placed between two felts; (3) Felts and sheet are pressed in hand press; (4) Sheets dried on ropes.



$25,000,000 TWINS PRODUCE 235,000 TONS A YEAR at Jesup, Ga. This is one-fifth of Rayonier's total annual production. Finishing room, common to both old and new mills, extends left to right in foreground.

"Image" Mill—But It's Different

. . . in many respects as Rayonier finds ways to improve on old. Here are new pictures and new details about Georgia plants.

By WILLIAM F. DIEHL JR.
Southern Editor, PULP & PAPER

—Jesup, Ga.

● Standing in front of the impressive Rayonier mill, you might at first think you are seeing double—but this is no trick of the eyesight. What you are really seeing is two mills, one built in the image of the other.

Shoulder to shoulder they make quite an impressive set of twins.

Here, deep in the heart of Georgia and near the sprawling and mysterious Okefenokee Swamp, Rayonier has invested $50 million in the future of the cellulose industry. The company has done a nice job of plastic surgery on the once quiet town of 4,600 whose future had seemed limited to cattle and tourist trade (it is at the junction of New York-Florida highway 301 and east-west highway 341). Now the face of Jesup is changed and it is a bustling industrial hub of more than 6,000. Rayonier's effect on Jesup is easily calculable—the average straight pay of its hourly workers today is more than double what the average family income was in 1950. More than 700 are on the company's $4 million a year payroll. Many more derive income from the $10 million Rayonier will spend this year for pulpwood.

One Fifth of its Production

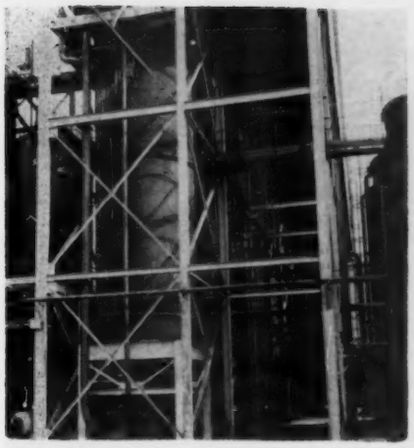
More than a fifth of Rayonier's entire 915,000 annual tons of woodpulp and cellulose is produced in these two mills, which might be described with one word: "versatile." The first mill was on stream by mid-1954. Only minor changes were made in design and equipment when the second mill was put on paper. Today, these mills operate interchangeably, either producing the same grade of pulp, or as separate units, one making paper woodpulp, the other a special new tire cord rayon cellulose.

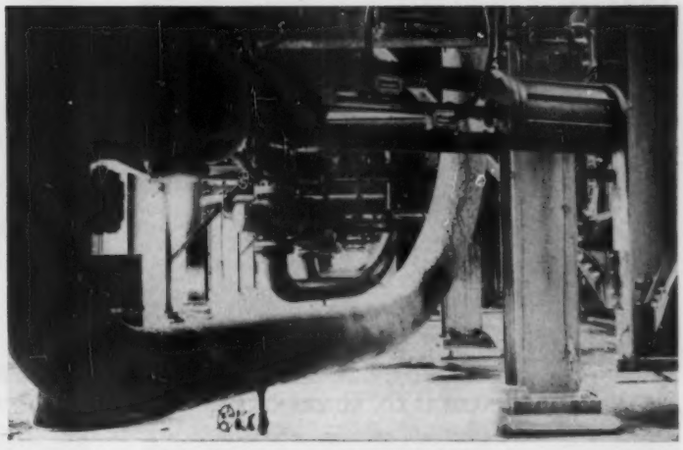
The mills are in an area relatively free of industrial competition. They are served by two major railroads. They are adjacent to the swift Altamaha River, which has a greater flow than the Hudson River; a sister mill is a bare 100 miles away in Fernandina Beach, Fla.

Coming at a time when economists are prone to hedge a bit when asked questions relating to business and recessions, Rayonier's new mill is part of a long term plan.

"There isn't any basic change in the world consumption of cellulose," commented Rayonier's president, Russell Erickson. "All studies point to continuing rise in the world use of these products. We want to be ready."

Since completion of the first Jesup mill four years ago, Rayonier has spent $89 million for plants, research and woodlands. That is quite a gesture of confidence in the future. Here follows a new picture story of this mill (In PULPWOOD SECTION is a report on woodyard and wood preparation).





EIGHT A. O. SMITH DIGESTERS HAVE . . . PAUL BALL-TYPE HYDRAULIC BLOW VALVES

Pulp Mill—Only Operating Floor Enclosed

Going through the new unit at Rayonier's Jesup, Ga., mill is much like stepping through a looking glass. On the other side, there were a few changes, however. Since Unit "A" was laid out in a straight line, Unit "B" was simply built alongside it. Recovery, digester, washing and screening, power and machine room areas are so closely integrated in some places it is impossible to tell where the old mill ends and the new begins.

The operating floor, only enclosed part of digester building, extends over the eight new A. O. Smith 316 ELC stainless steel digesters, each with 5,000 cu. ft. capacity. Besides Paul stainless steel ball hydraulically controlled blow valves, digesters have circulation systems by Electric Steel Foundry Co. Circulating and liquor pumps are all Bingham with Allis-Chalmers drives.

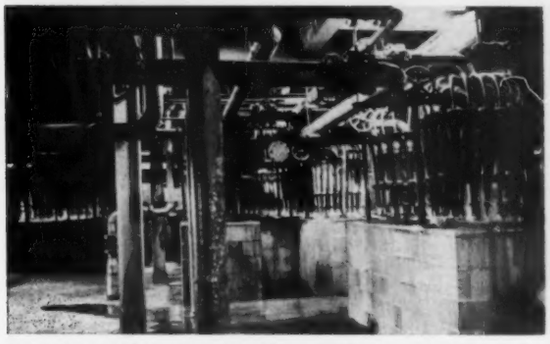
Pulp is blown from digesters to a 26 ft. dia. blow tank and from there to three Impco 9 ft., 6 in. by 16 ft. brown stock washers. Vapors are recovered by a Fibre Making Processes blow heat recovery system which provides hot water for the entire mill. From washers, high density pulp goes to a Stebbins Semtile storage tank before moving on to Bird Vibrotor screens. This tank is large enough to provide plenty of reserve capacity to assure continuous operation as well as flexibility in pulp grade changes.

From high density storage, pulp is first passed through a special dilution system and from there to six Bird Vibrotor screens. Overflow stock goes to an Impco centrifugal screen for secondary screening, a change from Unit "A" where flat screens are used, and then to flat screens, which perform as tertiary screens.

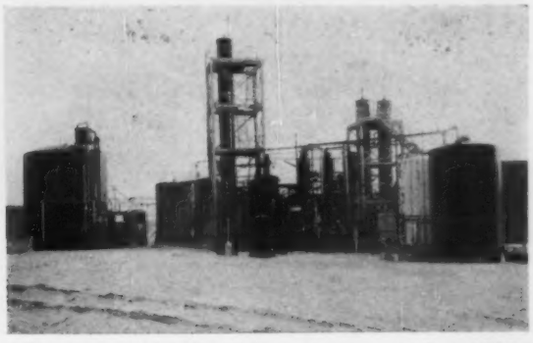
Cleaning and Bleaching—Chlorine Dioxide

The screened stock for Unit "A" at the Rayonier mill then passes through an impressive battery of Bauer Cleaners—almost half a floor of them—before stock gets a final washing in a 9 ft., 6 in. by 14 ft. tile vat Impco valveless decker, serving as a rewasher. Pulp is then delivered to a Semtile pulp blending and storage chest through a DeZurik regulator.

Rayonier's bleach plant uses the Solvay system for producing chlorine dioxide. A single tower makes it. The new Solvay plant does not require circulation pumps. Although the bleach plant is considered "off limits," Rayonier's staff did say the multi-stage system is partly responsible for the high quality cellulose. From bleach plant, a second high density storage tank receives stock which is diluted in a special ratio-controlled system and pumped, once again through DeZurik regulators, to three Bird Vibrotor screens ahead of machine blending chest.

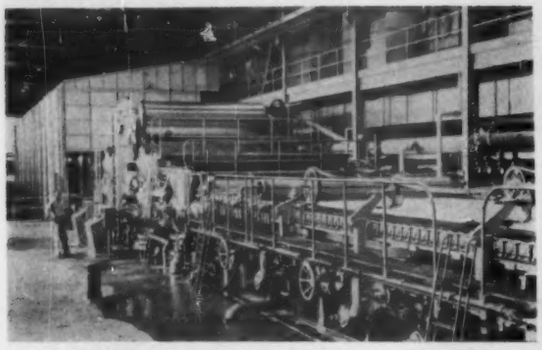


BAUER CLEANERS BEFORE FINAL WASH . . .

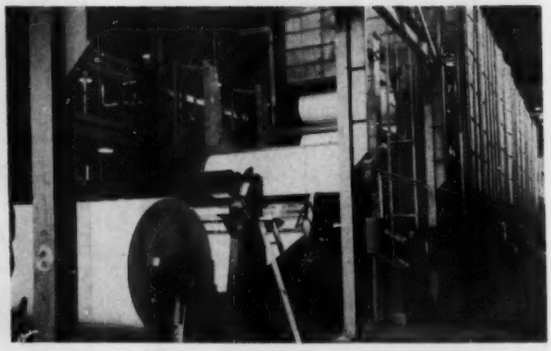


THEN, BLEACHING. High center tower produces ClO_2.

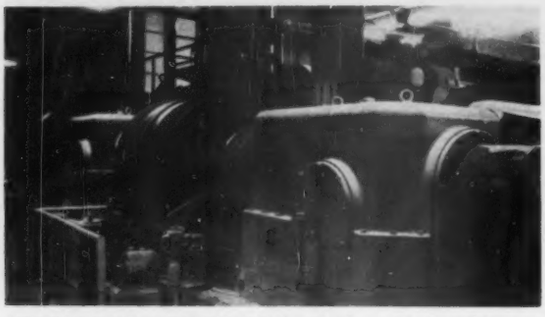
JESUP



175 IN. FOURDRINIER IS ON MEZZANINE.



DRY END WITH ROLLS IN STACKS OF TEN.



SWITCH FROM REGULAR line shaft on first machine...

TO WESTINGHOUSE SECTIONAL DRIVE on second.

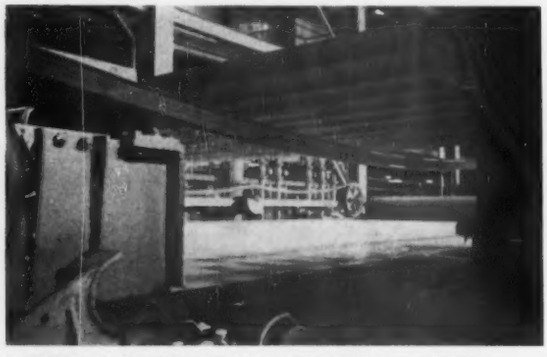
Picture Story of Pulp Drying

With exception of a change from line shaft to a sectional electric drive, the two Rice Barton machines are virtually identical. The new dryer is equipped with a 175 in. removable Fourdrinier and a stainless steel headbox. Both machines have a "dribble shower" attachment, as described exclusively in the Sept. 1957 issue of PULP & PAPER.

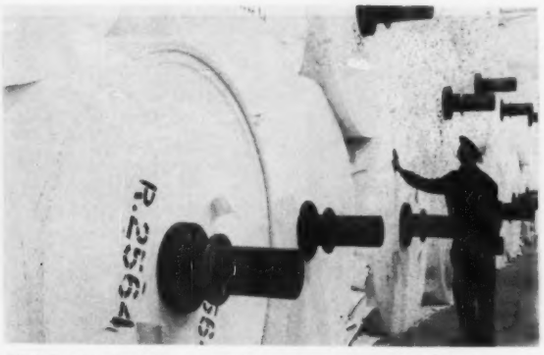
From the Fourdrinier, on the mezzanine floor, the sheet passes over ninety-four 48 in. dia. by 175 in. dryer rolls in stacks of 10. These elevated dryers take less space and are easier to tend, says Rayonier. Its operators say the air systems "might" function a little better when dryers are thus arranged. The dryer section is enclosed in a Ross Engineering hood, which extends almost to floor, with Midwest Fulton condensate system. Nash Hytor vacuum pumps are used. A Foxboro Dynalog moisture control gives hairline control of moisture content.

The sheet is wound into 12-ton jumbo rolls. A cable car on a floor track carries rolls into storage and finishing.

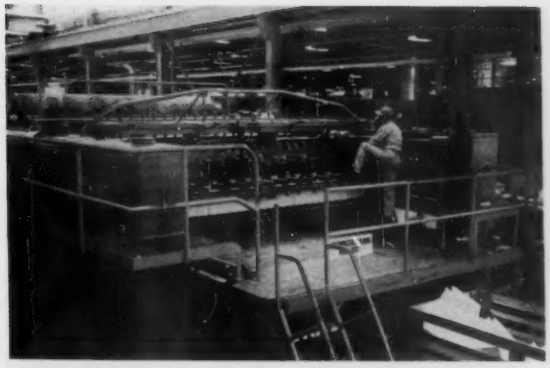
FOXBORO DYNALOG on machine



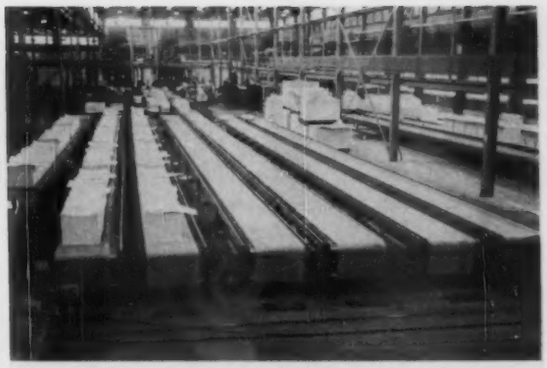
"DRIBBLE SHOWER" ATTACHMENT IS USED.



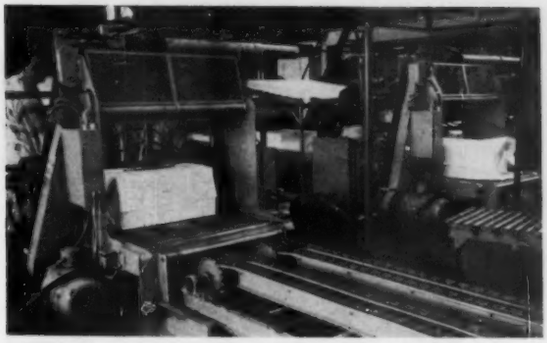
STACKED ROLLS, IDENTIFIED BY NUMBER.



PULP IS CUT INTO SHEETS HERE.



CARRIED BY 10 CONVEYORS to balers and tying machines.



AUTOMATC TYING REDUCES MEN NEEDED HERE TO FOUR.

AS COMPARED TO THIS OLD METHOD, REQUIRING EIGHT.

Finishing – Improvements Over Old

The Unit "A" finishing room at Rayonier's Jesup Mill was enlarged to accommodate a new Lamb-Grays Harbor pulp cutter and layboy, two Washington Iron Works 1,000 ton baling presses and conveying and packaging equipment. The E. D. Jones & Sons Pulpmaster is here, fed by slat conveyor with rejected pulp and broke and by a Bloapco pneumatic conveyor with trim from cutter.

The two 166 in. Lamb-Grays Harbor cutters and layboys are side-by-side. Each layboy is served by a conveyor which takes trimmed sheets from under the layboy and moves them on rubber belt conveyors to a second conveyor that acts as a "delivery boy" to final baling lines. There are 10 stationary Goodrich rayon cord rubber belt conveyors delivering stacked pulp to any one of four baling positions by remote control.

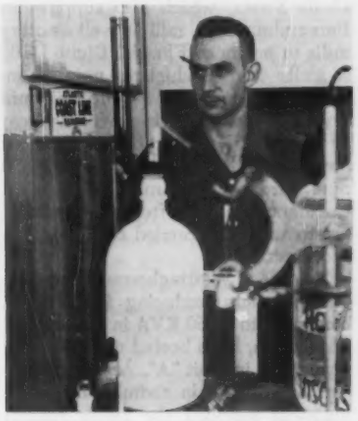
A Tennant automatic wire tying machine, following balers, has reduced manpower from eight men to four required for tying wires.

For Pulp, A Microscopic Obstacle Course

"We sell uniformity at Rayonier . . . a controlled raw material for our customers that's always the same."

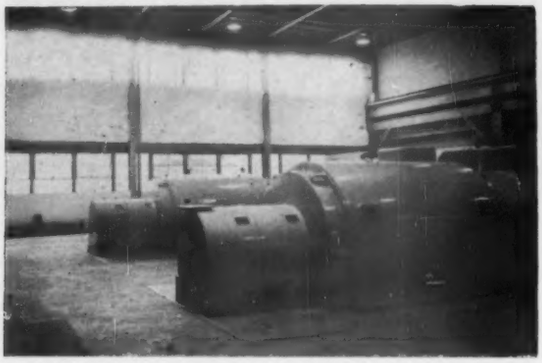
Chief Chemist R. E. Peach has the job at Jesup of constant and continual testing of pulp and materials. Pulp is checked for viscosity (several times), consistency, Tappi K number, metallic content, ad infinitum.

No pulp is shipped for at least 48 hours after it is reeled—in order to make sure that all the testing has been completed.



VISCOSITY TEST IS ONE OF LAST CHECKS before pulp is shipped. At left, high alpha cellulose is churned in tank and whipped into a fluid. At right, tests determine viscosity.

JESUP



WESTINGHOUSE GENERATORS BEEF UP POWER.

DELAVAL TALL OIL BY-PRODUCT PLANT.

Recovery and Power—More of It

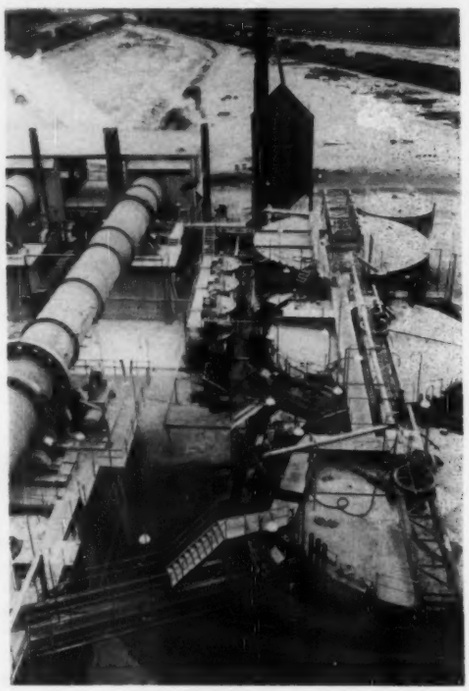
The "mirror mill" recovery area, with a few notable exceptions is a duplicate of the first. The Dorr-Oliver causticizing equipment is similar except that a single compartment green liquor clarifier is used in place of the three-tray clarifier in the first mill. The 11 by 180 ft. Allis-Chalmers lime kiln is the same.

The new power boiler is rated at 200,000 pph steam as compared to 135,000 for "A" mill. A single Combustion Engineering recovery boiler with 450 tons a day capacity was added to the two existing units and a new Chicago Bridge sextuple effect evaporator was added. A single Research Corp. wet bottom type precipitator serves the new boiler. Most of the motor and pump equipment was selected to duplicate Unit "A" equipment. Bingham stock pumps, Allis-Chalmers motors and Walworth valves are used throughout.

Rayonier draws its water from the Ocala Strata, which also supplies its Fernandina, Fla., mill as well as other mills in northern Florida. Eight 1,100 ft. wells—four of which are new—pump 48 million gals. a day into the mill system. This water is perfectly clear and requires no filtration except for bleaching where softening from 150 ppm hardness to zero is done in 12 Cochrane zeolite softeners. Chemical pre-treatment is carried out in Infilco accelerators.

Two new Westinghouse turbo-generators, each producing 9,375 KVA compared to 6,250 KVA in the original installation, have beefed up the power output. As in Unit "A", Allis-Chalmers supplied the main switchgear. Westinghouse supplied the motor control centers.

Twin M. W. Kellog brick-lined concrete stacks are both 250 ft. high,



ALLIS CHALMERS KILN . . . DORR-OLIVER CAUSTICIZING.

Ebasco Services, Inc., of New York was in charge of construction service management; Rowland Tompkins & Sons, N. Y., piping, and Cleveland Electric of Jacksonville, Florida, electrical work.

Waste Liquor at Jesup, Ga.

One of the reasons Jesup was selected for the mill location by Rayonier is the Altamaha River, with an average daily flow of 8.4 billion gallons at the mill. With a river of this size, even during the hot, summer months, waste from the mill is diluted almost 100 times after entering the river.

Rayonier called in the National Council for Stream Improvement to make a survey before building the first mill. The results were analyzed by specialist Dr. C. J. Velz of Michigan State University for the National Council. He determined that two or three mills the size of the Jesup mill could safely be located on the Altamaha. With this report in hand, Rayonier went ahead with No. 1 mill, building as a precaution an ample settling basin. When Unit "B" was built the settling basin was enlarged and divided into two sections—an "inner" and an "outer" lagoon. The inner lagoon, fed from digester and recovery areas, retains effluent for 60 to 90 days, enough to reduce biological oxygen demand more than 50%. The effluent then flows to the outer lagoon which retains weak effluent and also acts as a settling basin for solid matter.

The inner lagoon, added when the second mill was designed, cost $100,000.

RAYONIER STAFF. From left, Res. Engineer Ralph V. Zepp; Office Mgr. W. P. Joyner; Asst. Mgr. (Operations) Lowell M. McGinnis; Pulp Mill Supt. John Hooper; Gen. Mgr. of all Southeast Operations Fred Doherty; Asst. Mgr. (Engineering) E. K. Murphy; Woodyard Supt. W. P. Nooney; Personnel Director Charles E. Anderson; Chief Chemist R. E. Peach and Finishing and Warehouse Supt. R. F. Swenson.

Rayonier's Shakedown Woes Avoided As Pre-Testing Tied in Mill "A"

Rayonier started planning for start-up of its new mill at Jesup, Ga., even before it went on the drawing board. Since the two mills were to be interconnected with interchanging water, steam, liquor, and compressed air lines, starting up the new unit could be more painful than athlete's foot to a centipede.

Anticipating a potential headache at the time the new mill was cranked up with the old one in operation, Rayonier made its plans accordingly. In charge of the project was B. W. (Buck) Haskell, Jesup's field project engineer. With a team of engineers, Mr. Haskell carefully studied the first mill to determine where design and equipment might be improved on.

Among biggest changes in Unit "B" were: Sectional drive on No. 2 machine instead of line shaft drive used on No. 1; single compartment green liquor clarifier in place of the three-tray clarifier in Unit "A"; one large recovery boiler, whereas Unit "A" had two small ones; centrifugal screens for secondary screening instead of flat screens; magnetic flowmeters are used throughout Unit "B" for metering stock; the new Solvay chlorine dioxide plant does not require circulating pumps; the power boiler contains stationary rather than a moving grate.

It is interesting to note that no pilings are used under the mill. Instead Rayonier and Ebasco Services engineers employed the use of Vibroflotation soil compaction. Throughout the mill, brick, concrete and steel were used. There is no wood in the mill.

Right on the Money

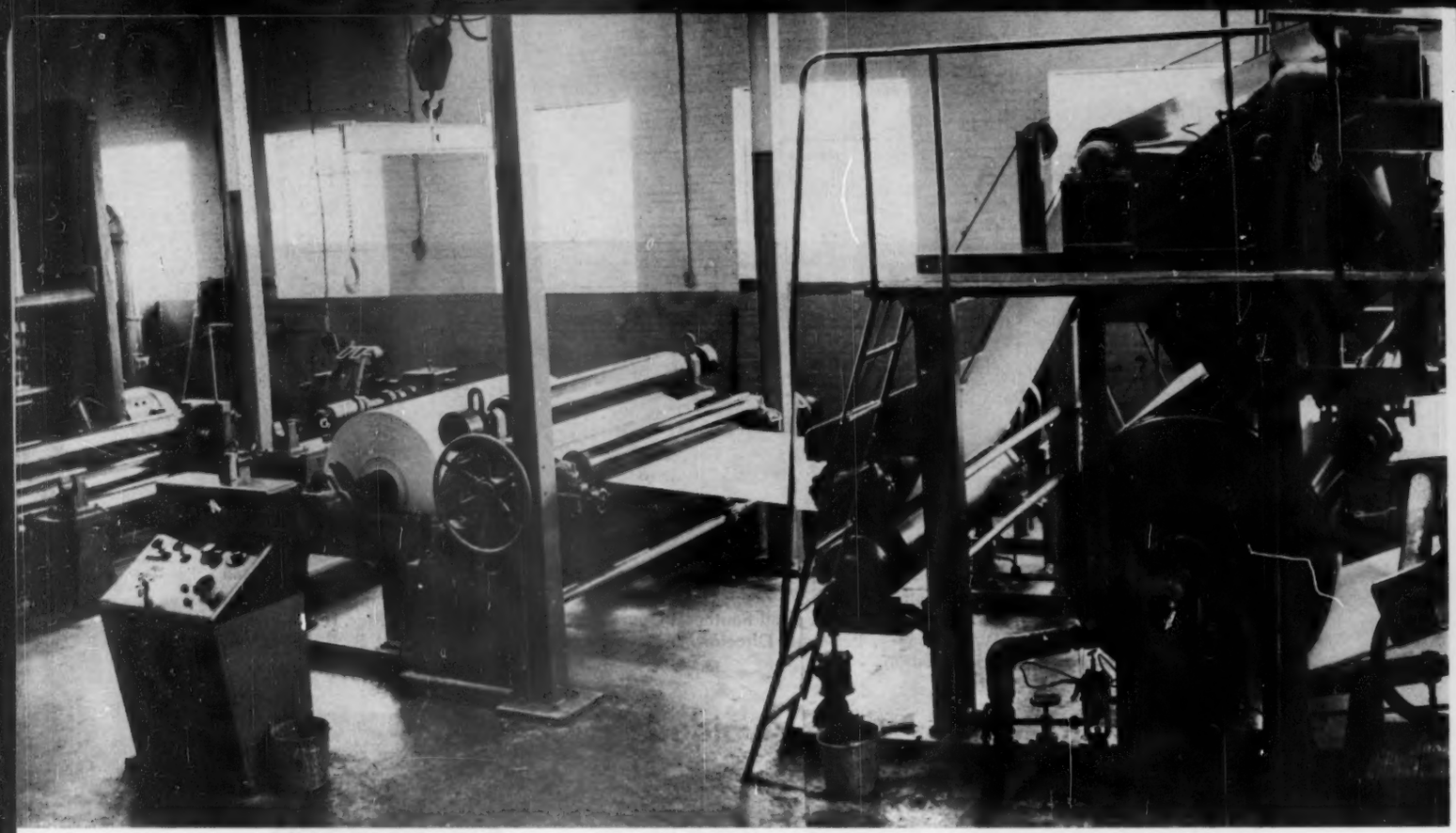
The new unit put on the line at only a few thousand dollars from the original cost estimate—$24½ million. Interesting aspect is the manner in which the theory of pre-testing equipment was carried over into major areas, i.e., the recovery area, where completely interconnected power, water, steam, compressed air and liquor lines permit cross-operation of the old and new units with either production line. As the recovery area was completed, the lines were connected with Unit "A" and the "A" recovery area shut down for maintenance. The new line was checked out and the old line was repaired when necessary without losing a day of production.

In the power area, ready six months before the machine was ready, the new bark boiler was put on line "A" and the older unit closed off temporarily. This was also done with turbines, recovery boiler, evaporators, etc.

When the machine was ready for shakedown, the rest of the mill was already checked out and ready. As a result, pulp was delivered to the machine the day after the woodyard was cranked up. A salable sheet was produced the first day.

NEW MANAGER at Jesup is George E. Scofield. A graduate of U. of Washington, he previously worked at Rayonier's Grays Harbor and Fernandina mills.

CAREFUL PRE-PLANNING BY Field Project Engineer B. W. (Buck) Haskell (right) and his staff was responsible for smooth startup. Here Haskell checks over plans with J. L. Aitkens, of field engineering staff. At right, engineer C. F. Johnson.



COMPOSITE PICTURE OF TWIN OFF-THE-MACHINE BLADE COATER at Crocker, Burbank, now coating at → speeds exceeding 1,000 fpm, has top designed speed of 2,000 fpm.

Trailing Blade Coater Blazes a New

This exclusive report takes the wraps off one of the industry's hottest machines—Crocker, Burbank's coater for specialty book papers.

By MAURICE R. CASTAGNE
Eastern Editor, PULP & PAPER

● Nothing in the paper coating industry is currently causing quite as much excitement as the trailing blade coater. It is, say some coating specialists, the "hottest thing to come down the pike since the Thirties" (when high speed on-machine coating revolutionized both the printing paper and magazine publishing industries).

Once thought to be limited in application to breadwrap papers, the blade coater has proven so versatile that it has invaded such fields as board, foodboard, magazine and publication and freezer wrap.

Crocker, Burbank & Co., Ass'cn. at Fitchburg, Mass., has taken the Rice Barton blade coater, added some refinements of its own design and is successfully coating specialty book grades (non-glare, and super calendered). Versatility of the coater is such that they are producing coated book ranging from 30 lb. (25x38) to cover stock, 150 lb. and higher.

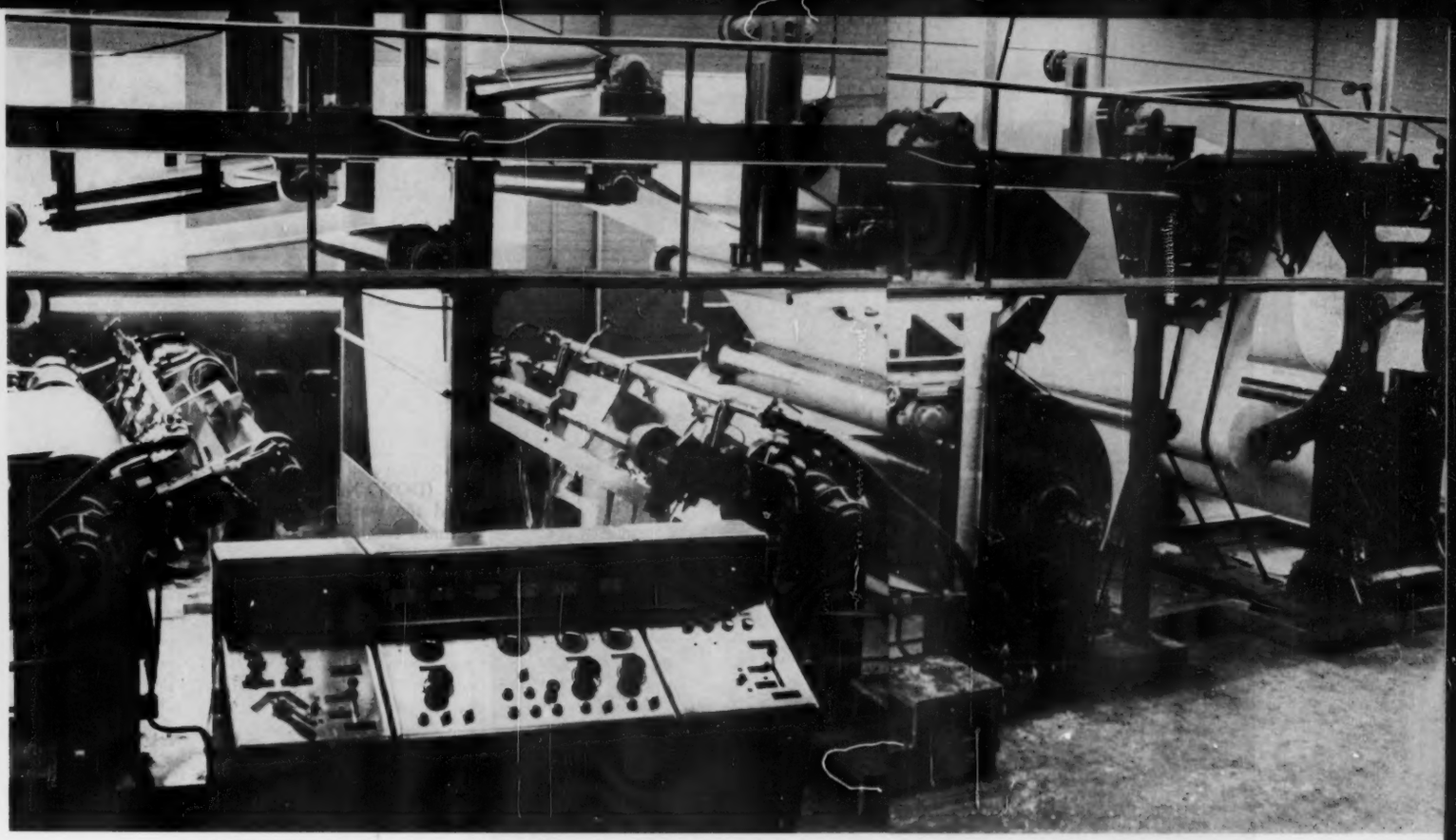
Crocker, Burbank, 132-year-old specialty paper manufacturer, began to study the blade coater several years ago when it bought a Rice Barton 36-in. coating head and incorporated it into an experimental unit. In April, 1958 it turned over its commercial unit, built by Rice Barton to Crocker, Burbank's specification, went into production in May. The 72-in. width was selected after considerable investigational work to fit into a pattern of production from several paper machines and sized for printing presses.

The twin blade coater, 72-in. wide, handling roll widths from 40-in. to 68-in., is housed in a new two-story addition to the No. 8 book paper mill. Top designed speed of the coater is 2,000 fpm. Present coating speeds exceed 1000 fpm. Crocker, Burbank uses a high solids coating based on various latices, applying 2½ to 3 lbs./side/ream.

Coating Preparation

The coating color preparation system is all stainless steel. Coating materials are mixed in a preparation tank, then pumped to an overhead storage tank. From the storage tank, the color moves by gravity through a Sweco screen and into a holding or supply tank which feeds the coating heads. Coating viscosity is automatically measured and controlled by Norcross viscometers. Coating color is recirculated from the heads through the screen and to the holding tank.

A Wood Autoreel with a three-arm



READ THESE PICTURES FROM RIGHT TO LEFT. At far right is Autoreel unwinds stand, dryer drum and Jetzone high velocity air dryer and Rice Barton second coating head. Coated two side sheet is wound on Pope reel. → High speed (5,000 fpm) Cameron winder at far left has automatic roll ejector and hydraulic roll lowering table.

Field for Specialty Papers

spider and an Autopaster are interesting features feeding the raw stock to the coaters. Running belt tensions keep a pre-determined constant running tension.

When the running sheet approaches the core of the roll, the new roll, which has been prepared with a special splicing glue, is brought up to the same speed as the running web. At the touch of a button the sheet from the expiring roll is brought in contact with the rotating new roll and the expiring sheet cut off. A special technique in the construction of the splice allows it to go through both blades without difficulty.

The coating drying system combines steam heated drum dryers and Wolverine Jetzone high velocity air dryers.

Electrical Features

The entire coater is controlled and regulated by a Reliance Electric & Engineering Co. VSR (variable speed regulator) seven unit motor generator set (1,800 rpm) powered by an a. c. 100 hp motor. Each section of the coater has its own generator.

The coater motors are 20 hp each; unwind, 5 hp; pull rolls, 10 hp; Pop unwind, 15 hp. All are rated at 1750/2125 rpm. Each motor has a tachometer generator mounted for feedback giving a signal on how fast the rolls are turning. There is a vertical mounted electronic control panel in the MG room.

The master control is a time reference voltage supply. (Purpose is to take all the sections and tie them together during acceleration and deceleration which allows rapid change in speed without breaking the web.)

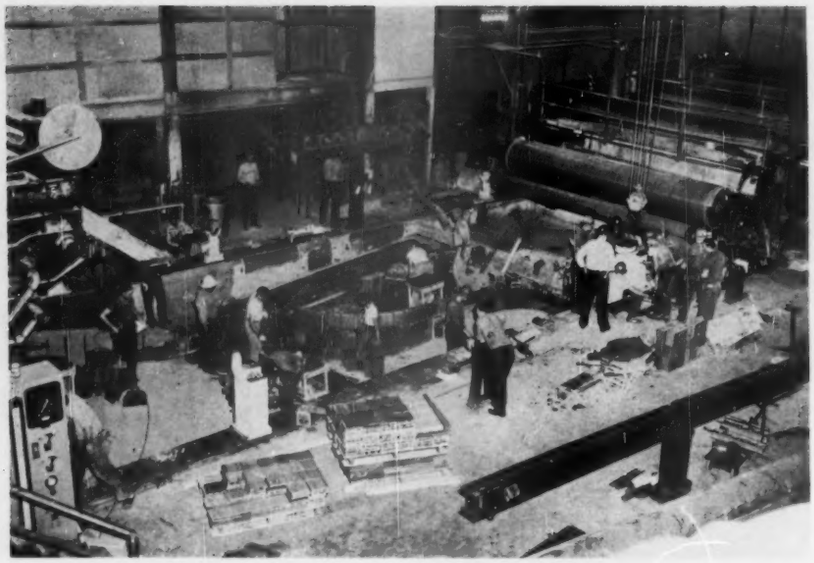
A key to the machine's successful operation is the control of draw between sections and this is governed by the VSR using the tachometer feedback signal for each section. No matter how fast the motor is turning there is a signal telling how fast the roll is turning. This gives control of acceleration and deceleration for the entire machine as a single unit; allows the entire machine to go up and down in speed together and at the same time each section is individually regulated.

For normal stop the drive is decelerated by a regenerative brake to a very low speed, then the dynamic brake is used to bring it to rest. The emergency stop disconnects the individual sections from the generator and stops them by dynamic braking.

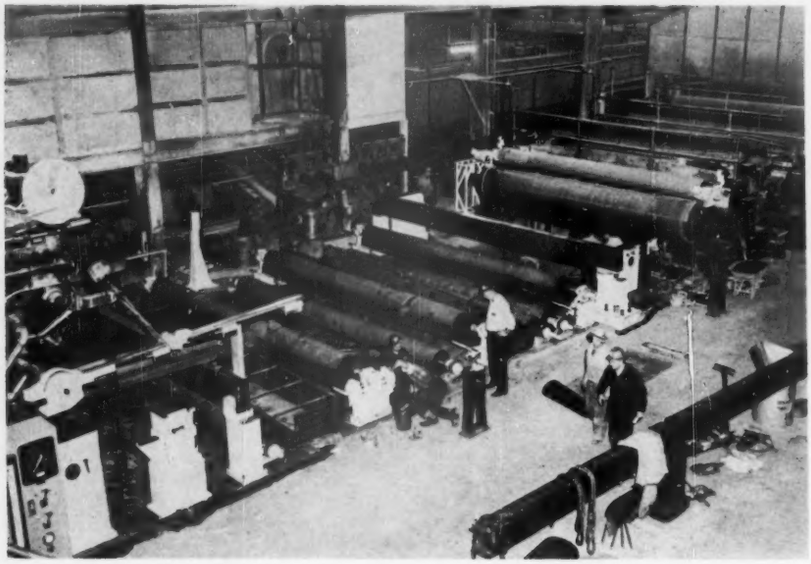
Tension or pull on the whole line is set (prevents tearing of the web). The lead section is the first coater. Draw relationship between unwind and the first coater is independent of the rest of the machine. The second coater, pull roll and reel have progressive draw (each one runs slightly faster than the previous). Any change in draw position on the first automatically changes the rest.

The Cameron winder is a high speed (5000 fpm) unit and is powered by a separate General Electric motor. The winder has an automatic roll ejector and hydraulic roll lowering table, and air actuated shear cut slitters. A constant tension device positioned on the unwind stand to the winder has an automatic water cooled brake to give an even payoff of the web into the winder.

Operation of the coater is so successful that future plans call for a wider and faster coater.



D (DOWN)-DAY PLUS 3 and tile work in wire pit is almost completed.



D-DAY PLUS 7 and wire return rolls are fitted into position.

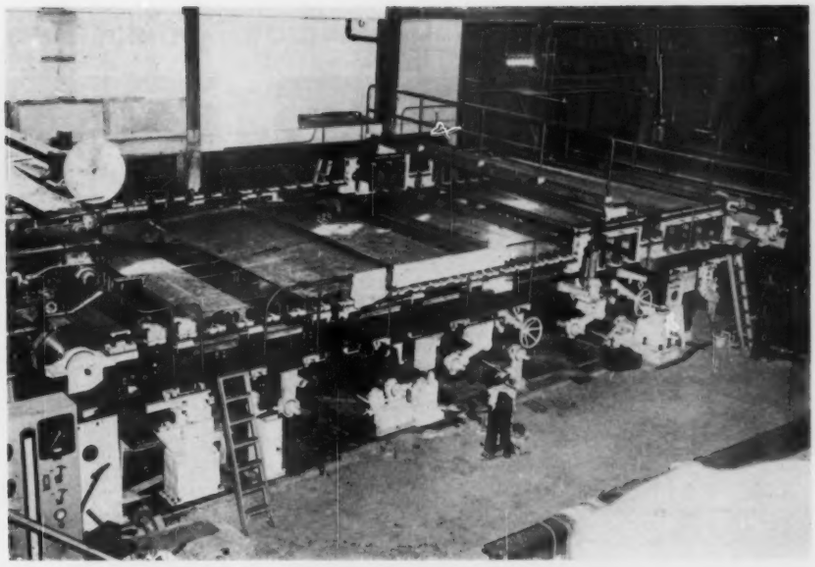
16 Days to Rebuild Machine

PROBLEM: Install a new, longer Fourdrinier, new headbox stock cleaning system and auxiliaries with minimum downtime.

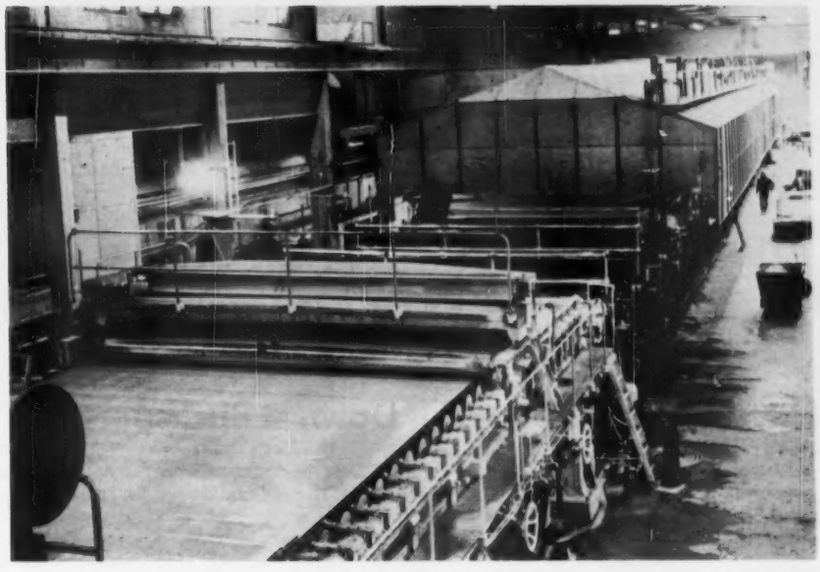
GIVEN: An engineering estimate of 6 to 8 weeks downtime.

TO DO: Reduce this estimate by making pre-downtime installations and effecting shortcuts.

• When St. Regis Paper Co. decided to convert its No. 1 (231 in.) paper machine making 25 to 45 lb. catalog papers at its Bucksport, Maine mill, it wasn't after a machine speed-up. Explains Resident Manager Fred C. Goodwill, "What we wanted to do was improve formation of the sheet. We decided on a new stock cleaning system, new headbox and a longer Fourdrinier.



D-DAY PLUS 13 and saveall pans, breast roll, two table rolls are in.



NO. 1 RUNS AGAIN, rebuilt, revamped and really rolling along.

"The resultant speed increase from modern equipment would at the same time help offset the cost-profit squeeze. In other words if we could get more and better production from existing equipment, we'd be in a better position all around."

The original estimated downtime was six to eight weeks, and called for all major changes to be made then. By planning to install as much equipment as possible before final shutdown, this was revised to three weeks. Actually, the rejuvenated machine was back in production making salable paper in 16 days.

Says Plant Engineer Steve Barry: "Our men did an excellent job. It was only possible because all hands cooperated."

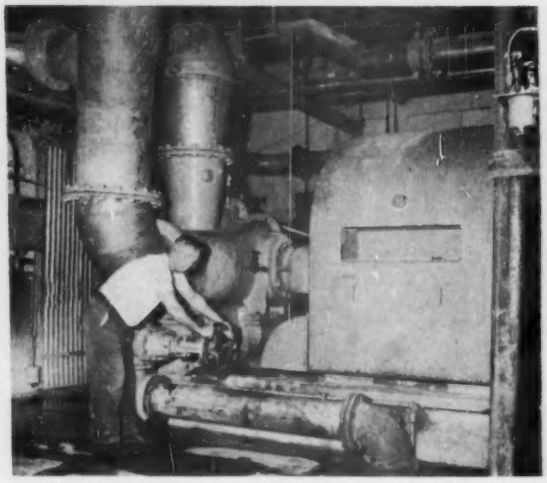
OTHER FACTORS HELPED CUT DOWNTIME:

1. A complete list of all equipment was prepared by the engineering dept. which included date of purchase, purchase order number, manufacturer, promised delivery date, date received, and a requisition number for each item.

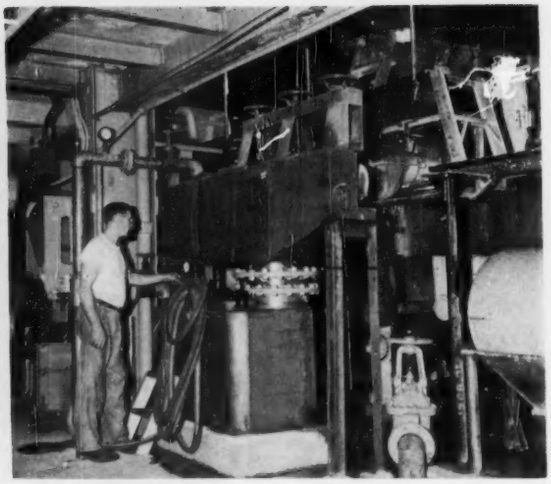
2. Each major piece of equipment had a number. The Fourdrinier was No. 1; Fourdrinier wire, 1A, etc. Purchasing let Engineering know when an order was received; thus Engineering could definitely set up a work schedule.

3. Progress reports were issued by Engineering. This was a monthly recap, supplemented by letters for any changes. Copies went to Central Engineering; general manager i/c pulp and paper manufacturing, purchasing agent; mechanical, electrical and rigging superintendents and office manager. In these reports, various departments were alerted to what they had to do; Purchasing was kept up on what they had to expedite. Accounting knew what labor charges and bills were coming up.

BUCKSPORT REBUILD



INVERTED BOTTOM SUCTION MADE INTO SIDE SUCTION is feature of this special design Warren fan pump, with 200-ft. head, is dual volute, single stage double suction with enclosed impeller. It is an inverted bottom suction made into a side suction. Pump is driven by a 800 hp, 900 rpm General Electric weather-protected synchronous motor with full voltage starting. A metal enclosed air break magnetic contactor with suitable relaying starts and stops the motor. Motor was purchased with space heaters inside the frame to protect the coil insulation against moisture absorption during downtime. These heaters are energized automatically when the motor is stopped.



SIMPLICITY OF OPERATION, NO MOVING PARTS, are features of Poirier Barometric syhpon system. Says St. Regis, "No automatic equipment and few valves to worry about. Once it's set, you don't have to set it as you change grades. It takes care of itself. Merely shut off or open up other suction boxes. Unit operates by a Nash L6 30 hp, 1200 rpm pump. All white water goes to one seal tank and distribution of white water can be varied better to whatever application we are going to use it on. Unit saves in vacuum pump requiremens. Drop legs are completely sealed so that there is no chance of breaking vacuum. Because of this, there is no variation in vacuum."

How Downtime Was Cut Down at Bucksport

By STEPHEN A. BARRY

Plant Engineer, St. Regis Paper Co., Bucksport, Me.

To expedite conversion of No. 1 paper machine with a minimum of downtime, it was necessary to make some temporary changes on shutdown Sundays which permitted construction crews to work while the machine was in operation.

Shartle Selectifiers were first purchased and installed temporarily in the system. This permitted removal of the old screens, platform, etc., and the erecting of new foundations for permanent installation of the Selectifiers. The removal of the old equipment also made it possible to install a new pressure headbox behind the old headbox in its permanent location.

The old headbox was then temporarily supported to allow removal of foundations and floor beneath, and permitted the rebuilding of an extended wire pit to accommodate the longer Fourdrinier.

New Bauer Cleaners, fan pump, auxiliaries, and piping were installed and cut into permanent system on a shutdown Sunday.

The new cleaning system and Selectifiers were in operation a number of weeks before the major changeover. On a Sunday the big job started on a two, 10-hour shift basis and it was anticipated that three weeks would be required to complete the changeover. The old Fourdrinier and headbox had to be removed along with auxiliary equipment. The wire pit and couch pit were tile-lined, Fourdrinier and Poirier vacuum system installed.

Sixteen days later the machine was making salable paper. This was accomplished only by combined efforts and cooperation of all personnel concerned.

Major Equipment and Steps Involved in Bucksport Conversion:

New Rice-Barton Fourdrinier with 110-ft. wire; 231-in. wide, trims 210-in. Fourdrinier has 22 table rolls, six are grooved. There are six suction boxes with possibility of adding a seventh if needed.

Beloit pressure type headbox.

Bauer Cleaners.

Shartle Selectifiers.

Warren fan pump, 12,500 gpm.

New, enlarged Stebbins tiled wire pit.

Dorr-Oliver disc saveall.

Johnson screen—Bird Machine Co.

Poirier barometric syphon system on suction boxes.

Two General Electric substations; four G.E. motor control centers.

Stainless steel piping and fabrication by Portand Tank & Copper.

Rice-Barton shake drive; one additional dryer drive.

Relocation of winders.

Electric Highlights of Machine Rebuild

By NORMAN DANFORTH

Electric Supt., St. Regis Paper Co., Bucksport, Me.

In the conversion of No. 1 paper machine we decided to use a P.V.C. jacketed armored cable throughout for two reasons.

1. The cost of the complete installation of the P.V.C. armored cable, compared to rigid conduit and wire, shows a substantial saving.

2. It would have been impossible to make the installation in time allocated if rigid conduit and wire had been used.

Two modern General Electric 500 kva unit substations were installed transforming 3 phase, 60 cycle, 2300 volt power to 460 volts. To supply power to these unit substations, modern air brake circuit breakers of the draw-out type were used, rated at 1200 amperes, 150,000 kva, interrupting capacity. The substations are to supply power to four modern motor control centers totalling approximately 900 hp.

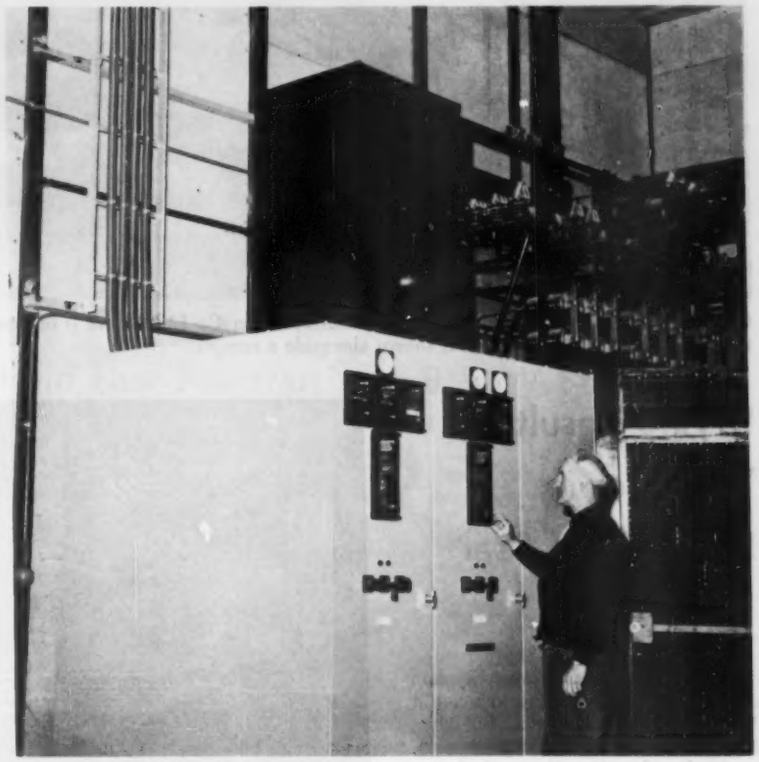
The new metal clad switchgear features meters of the draw-out type which facilitates testing or repairs under operating conditions.

The modernization of the motor control centers was required because of space limitations. Modern control is so much more compact that approximately three times the control equipment can be installed in the same floor space required by the old equipment which was installed in 1930.

By taking advantage of shutdown time each third Sunday, the old control centers were moved about six feet and connected temporarily to the respective motors so that the new units could be installed before the actual shutdown. About 60% of the permanent connections on the new control centers were made before shutdown.

Two electronic voltage regulators were installed on the paper machine generators to give more stable voltage regulation on the d.c. buses. Electronic voltmeters were installed to record the voltage regulation on these d.c. buses which is maintained within plus or minus 1/10 volt.

Our main problem was time. This problem was solved by use of the P.V.C. flexible cable installed in aluminum racks. This reduced actual installation time by one-third and allowed the necessary flexibility of transition from the old to the new system.



TRANSFORMS 2300 TO 460 VOLTS—Two modern General Electric 500 kva unit substations were installed transforming 3 phase, 60 cycle, 2300 volt power to 460 volts. To supply power to these unit substations, says Norman Danforth, Electrical Supt., modern air brake circuit breakers of the draw-out type were used, rated at 1200 amps, 150,000 kva interrupting capacity. The substations are to supply power to four modern motor control centers totaling approximately 900 hp. The new metal clad switchgear features meters of the draw-out type which facilitates testing or repairs under operating conditions. Cable on wall is red PVC, covered flexible armored.

$20,000,000 Program for Gulf States

The third major expansion for Gulf States Paper Corp. in ten years is under way—a $20,000,000 construction and modification program for both the Tuscaloosa and Demopolis mills in Alabama.

President Jack W. Warner told PULP & PAPER the program will extend over three years.

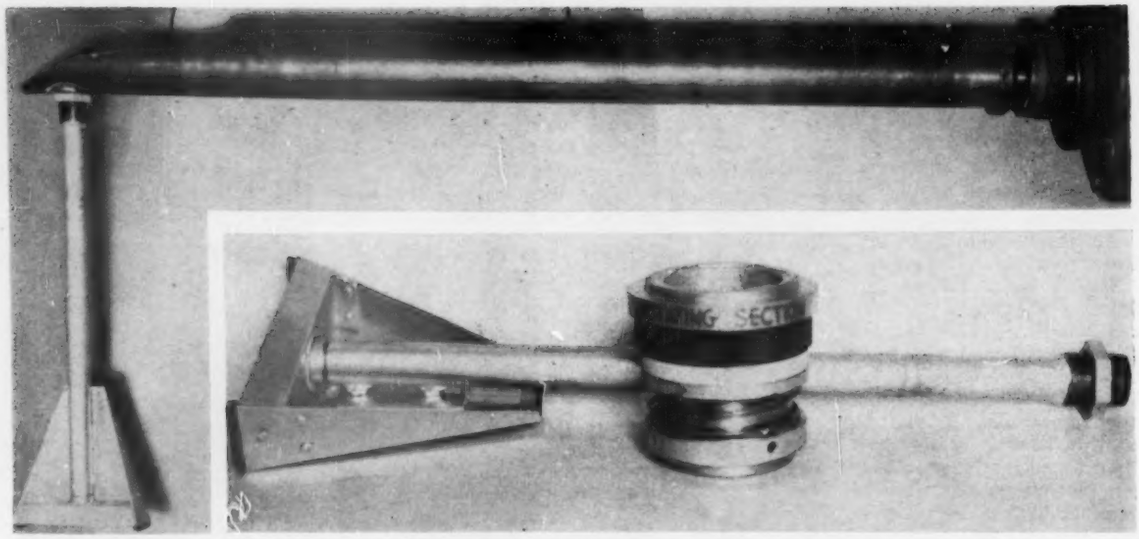
Production of the Tuscaloosa mill was increased in 1948, and the new Demopolis mill was opened last year.

The new program will continue the construction of the Demopolis mill to make possible the production of a wide range of finished and semi-finished paper and pulp products. These products will range from the fine, bleached pulp now being made there from Southern pines and hardwoods, to fine, white papers.

"Plans for the Tuscaloosa plant," said Mr. Warner, "call for modifications and modernization to improve further the quality of the products now being manufactured, a quality now recognized as number one in the industry, and to increase the product line in order that Gulf States Paper may better serve its customers."

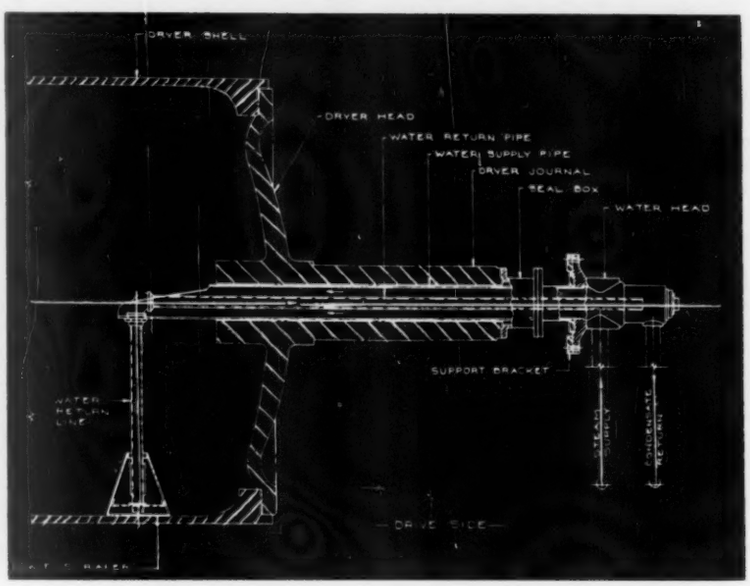
Completion of this program will make it possible for Gulf States Paper to utilize better the abundant supply of hardwood available to its manufacturing facilities.

Mr. Warner concluded by saying these plans represent a reaffirmation of Gulf States Paper's faith in the future of the South.



COWIE SCRAPER AND SEAL in use at Mersey Paper Co Ltd. Above is the assembly for the scraper, which goes inside the dryer. In inset, a Cowie seal is shown alongside a scraper.

Drying Results With Cowie Scraper and Seal



The new Cowie Scraper Syphon and Cowie Steam Seal, introduced at Mersey Paper Co., Ltd., Brooklyn, Nova Scotia, newsprint mill and now credited with aiding the even drying of the extremely wide sheet on Great Lakes Paper Co.'s new No. 4 machine (342 in. wire), is shown in conventional dryer application in the drawing at right. This is in a dryer which uses steam as a medium of heat and is the normal one for paper machines.

A confusion in similar names of two distinguished engineers of this industry in Canada led to an error in PULP & PAPER's November story on No. 4 machine at Great Lakes, and besides, credit for the machine's condensate system was misplaced.

Eli Cowan, consulting engineer for the entire mill, also designed a new stock proportioner (as the story said) but it was James C. Cowie, of Mersey Paper Co. (not Mr. Cowan), who designed the stationary syphons. It was Mr. Cowie, not Mr. Cowan, also, who designed the steam joints cited in the article. The condensate removal system is a Ross Midwest Fulton system, designed and supplied by Ross Engineering of Canada, Ltd., which also handles the Cowie Scrapers and Cowie Steam Seals. Ross Midwest Fulton Corp., Dayton, O., handles them in the U.S.A.

"We are particularly proud of the excellent performance of the installation on No. 4 machine at Great Lakes, because it is the first machine outside Mersey Paper Co. to be completely equipped with the scrapers and steam seals," writes R. E. Arbogast, sales manager of Ross Engineering of Canada.

The Cowie Scraper Syphon and Steam Seal also is used in a sweat dryer, where water is introduced into the dryer instead of steam to provide a sweating condition on the surface of the dryer. A shower spray pipe utilized in the sweat dryer is of such design that a very fine atomization and uniform spray is accomplished by supplying air at sufficient pressure to create a differential across the steam fit.

Before James Cowie, mechanical supt., Mersey Paper Co. Ltd., Liverpool, Nova Scotia, developed his scraper, Mersey operated in a speed range around 1500 fpm, where the performance of the standard syphon and the behavior of the condensate resulted in incomplete and erratic removal of condensate, and caused higher dryer loads and sharp changes in load.

The scraper was designed to remove these conditions; that is, keep the load

of water to a minimum and eliminate the formation of rimmed layers. In the simplest terms, the idea was to remove all condensate as it formed. Mr. Cowie's construction was based upon practical contact of a scraper on the inside of a dryer shell; a pocket being formed to allow the syphon to pull on solid condensate rather than on mixtures of condensate and steam, and syphon mounting of real rigidity.

Scrapers have been in use at Mersey Paper with much success. The dryer load is now very uniform and low. With the old equipment, the load had been as high as 250-300 amps. Now it is in the range of 150-170 amps and at times has been below 150. Maintenance on the scrapers has proved to be very low and difficulties in starting the

Mr. Cowie

Mr. Cowan

dryers have been eliminated.

Mr. Cowie's latest development is the seal, designed to simplify the steam head and provide a tight, sound seal, utilizing the internal pressure of the dryer to insure tightness. This seal incorporates both a carbon ring and a silicone rubber ring. So far, the combination appears to be effective and it would appear that maintenance will be very low, H. A. Paterson, mill mgr., told PULP & PAPER. One of the Mersey machines is completely equipped and the other is in process.

"We would hesitate to say how much steam has been saved, as we have not had sufficeintly long experience with the seal, but there is no doubt of a saving," said Mr. Paterson. "One need only to look along the back of the dryers to note that no steam is escaping as compared with other machines and other times when loss of steam was quite noticeable."

Mersey is a Bowater mill.

Report from New Mill in East Pakistan

The new newsprint and printing papers mill being built by Sandwell & Co., Ltd. (Vancouver, B.C., Canada) in Khulna, East Pakistan, is proceeding very well since martial law went into effect in that country.

A joint letter from C. W. E. Locke, resident manager, and Elmer Davis, general supt. gives a fascinating report on its progress. They and others of the Sandwell staff, which also will manage the mill, flew from North America via C.P. to Tokyo-Hongkong, then BOAC to Calcutta, and on to Dacca capital of East Pakistan, then Jessor, PIA, then finished the trip in "rickshas" and trains.

"If you have never ridden a ricksha or train in East Pakistan, you don't know what you have missed," they said. Here are highlights of their letter to this magazine—sent from Khulna District, East Pakistan:

"We had a few difficulties entering East Pakistan as they have declared martial law in both East and West Pakistan. But conditions are very much improved. Martial law has helped clean up some of the filth, vice and corruption and we feel everyone will do better. Anyway, that's the way it looks at present.

"This is a two-machine mill being built by Pakistan Industrial Development Corp., Karachi. Equipment is being built by Wartsila Koncernen AB, Maskin och Bro, Helsinki, Finland.

"At present No. 1 machine, which will make newsprint, has all the dryers and the Fourdrinier up. The breast roll, headbox and frames for presses are in place. This machine will be ready for start-up by May, 1959.

William E. Locke

Elmer Davis

Mr. Locke and Mr. Davis, now resident mgr. and general supt., respectively, of the P.I.C.D. mill in Khulna, East Pakistan, have held top key positions for many years in North American Pacific Coast mills. Mr. Locke was with British Columbia mills and Mr. Davis with Crown Zellerbach mills, having recently retired as supt. at Lebanon, Ore., U.S.A.

"For No. 2 machine work has started on erection of dryers and Fourdrinier section. It will make mechanical printing paper and will start up soon after No. 1 machine goes into production.

"Weather here at present is very good and they have built a very fine colony of nice homes for the senior men and staff houses for single personnel. They have also built a swimming pool, very fine club and hospital, staffed with doctor and nurse. Our job will be to get the mill in operation and train the native Pakistani to run the mill."

Others on the staff from the West Coast of North America are William Stidwell, assistant to the resident manager, and Art Palmer, groundwood supt., formerly with Crown Zellerbach.

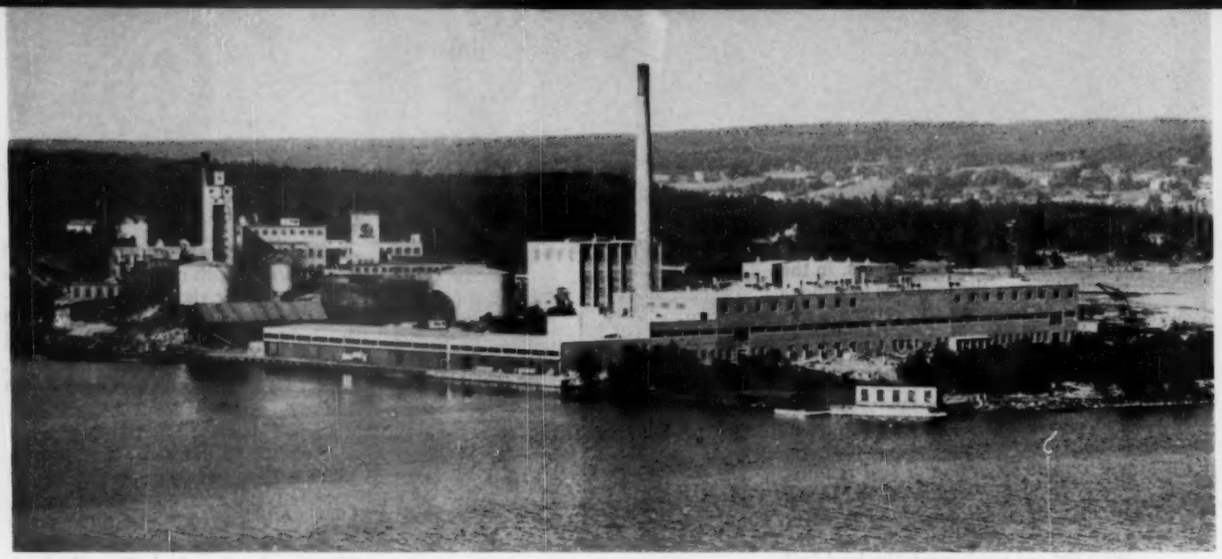
B & W Boiler Div. Moves to Ohio

Babcock & Wilcox Co.'s Boiler Division has moved, lock, stock and barrel, from New York City to its newly built home on Van Buren Ave., Barberton, O. (phone is Akron —PL 3-4511).

In the big shuffle there have been some new titles and new assignments, and to recount a few who are most familiar to the pulp and paper industry: L. S. Wilcoxson is vice pres. in charge of the Boiler Division. Frank Hutton is marketing manager, general sales office, Boiler Division. William J. Darmstadt is equipment specialist, general sales office, Boiler Division. Charges Rogers, another equipment specialist who specializes in pulp and paper, has been at Barberton right along, as he was assigned there for years in Boiler Division research.

James D. Stephens, now in Barberton, has a new position—assistant marketing manager for atomic energy. His work is now being handled by W. H. Jackson, assistant marketing manager, who has cognizance over other industrial products manufactured in the Boiler Division. George M. Stevens, who was Mr. Darmstadt's assistant in New York, has gone to Los Angeles to serve in Boiler Division sales work there. Pat Elmore has taken his place as an equipment specialist. Ed Houck, also in Barberton, continues as head of the Process Equipment Proposition Section.

Babcock & Wilcox's Tubular Products Division continues at Beaver Falls, Pa., and the Refractories Division remains in New York.



NEW NEWSPRINT MILL of Svenska Cellulosa at Ortviken, some 250 miles north of Stockholm.

Swedish Newsprint Giants

Svenska Cellulosa AB increases newsprint production four times with twin KMW machines, each trimming 256 in.

• Svenska Cellulosa Aktiebolaget (SCA—Swedish Cellulose Co.) is the largest producer of forest products in Sweden. Its 3,500,000 acres of productive forest lands comprise an area larger than the five Home Counties and Buckinghamshire in England and considerably greater than the State of Connecticut, U.S.A.

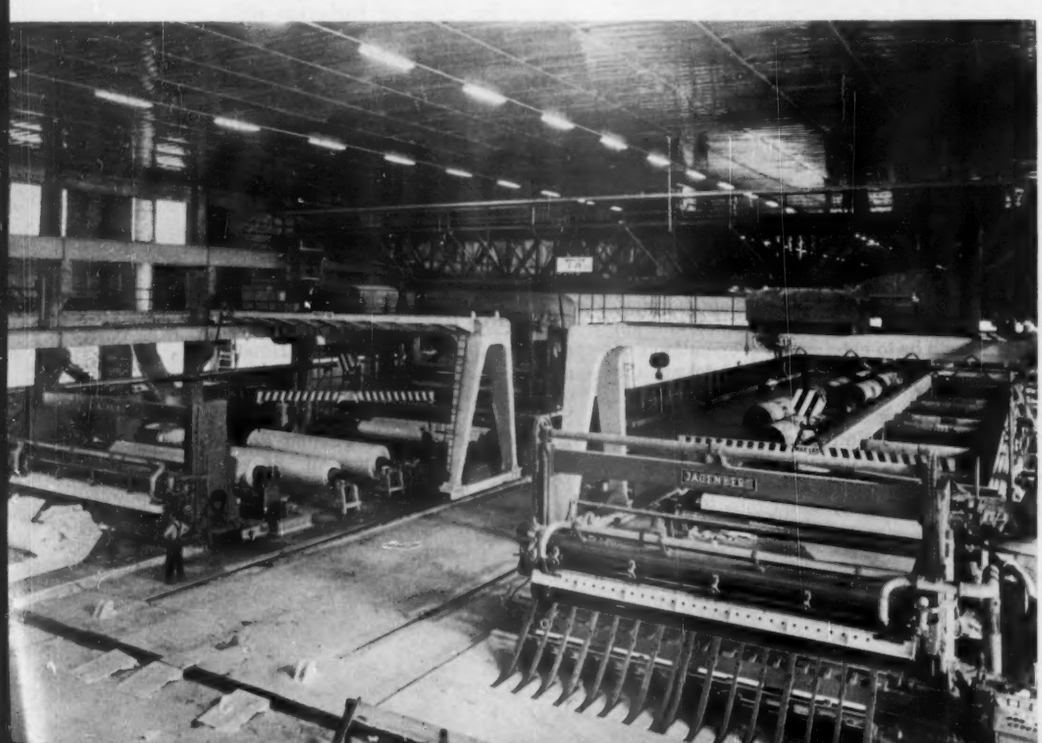
More than 17,000 employes staff SCA's forests and 25 plants which produce a variety of products from chemical and mechanical woodpulp, newsprint and wallboard to sawn timber and a host of other forest products. Svenska Cellulosa is the leading producer of market woodpulp in Europe.

Newsprint production has been a modest 60,640 short tons/year (55,000 metric tons), produced at its Matfors mill. Now SCA stands poised for a big plunge into newsprint with two ultramodern twin newsprint machines which will boost capacity to something like 237,045 short tons (215,000 metric tons) when in full production.

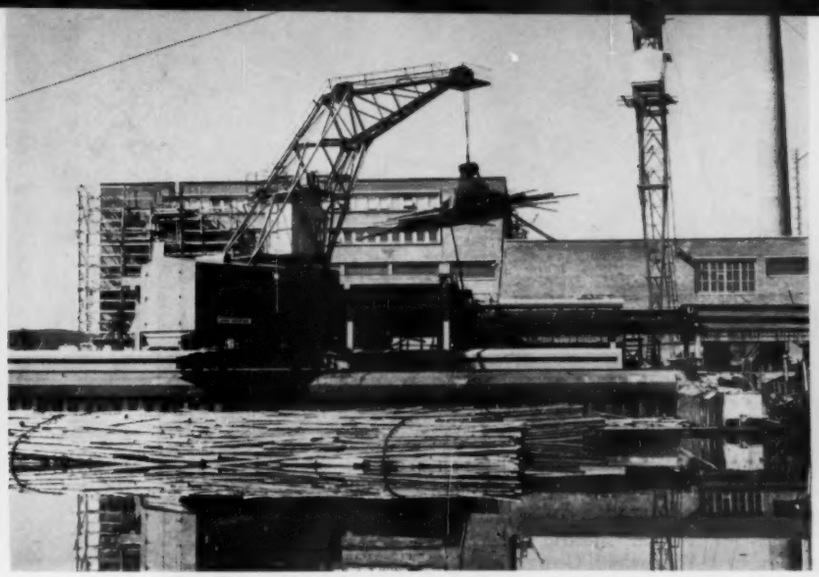
The new newsprint mill is at Ortviken, near the town of Sundsvall, some 250 miles north of Stockholm. The Ortviken mill was built in 1907-09 as a 13,230 short tons/year (12,000 metric tons) sulfite mill.

Production has been increased over the years to its present capacity of 47,960 tons/year (43,500) of bleached sulfite.

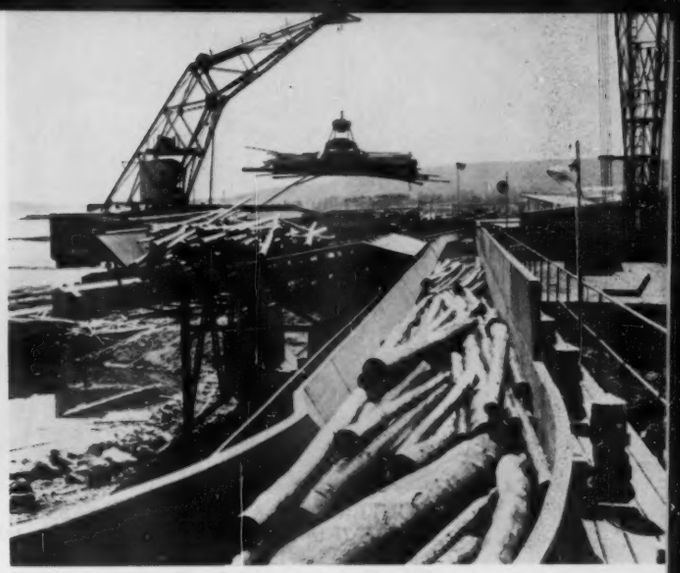
In 1917 a newsprint machine was added, converted to a pulp dryer in 1923 and reconverted in 1950 to produce 16,538 short tons/year (15,000 metric) of wrapping and corrugating papers.



IDENTICAL KMW NEWSPRINT MACHINES sit side by side in Ortviken mill. One on right is expected to start up in Spring of 1959. Each has a capacity of 80,000 metric tons (88,200 short tons). Both machines are balanced for 750 m/min. (2,460 ft/min.) with maximum speed of 650 m/min. (3,140 ft/min.) Wire is 7000 by 38,950 mm (276-in. wide by 127½-ft. long). Trim is 3500 mm (256-in.). Builders are Karlstads Mekaniska Werkstad. In foreground are two of three Jagenberg winders, made in West Germany, which serve the two machines.

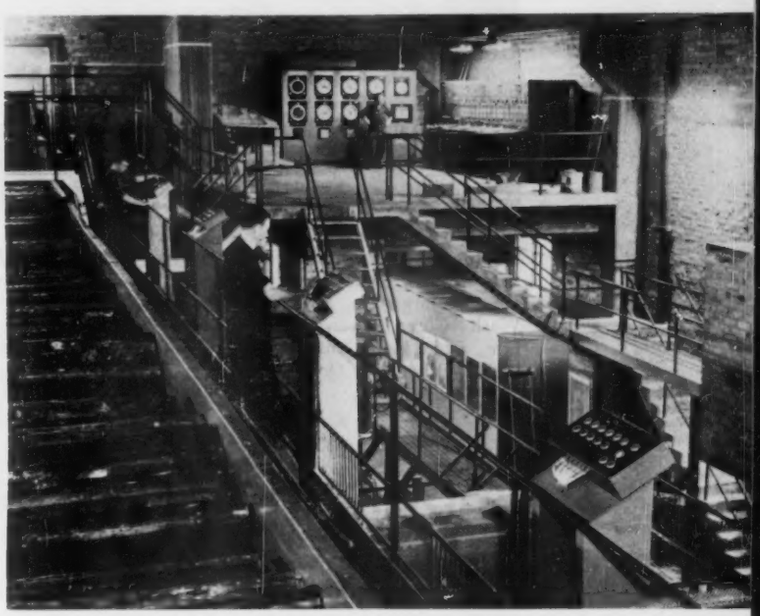


CRANE SWINGS LOAD OF WOOD from water to conveyor deck. Rafts in foreground each contain about 5000 pieces of wood; they come from northern Sweden, about 500 miles along the Baltic coast.



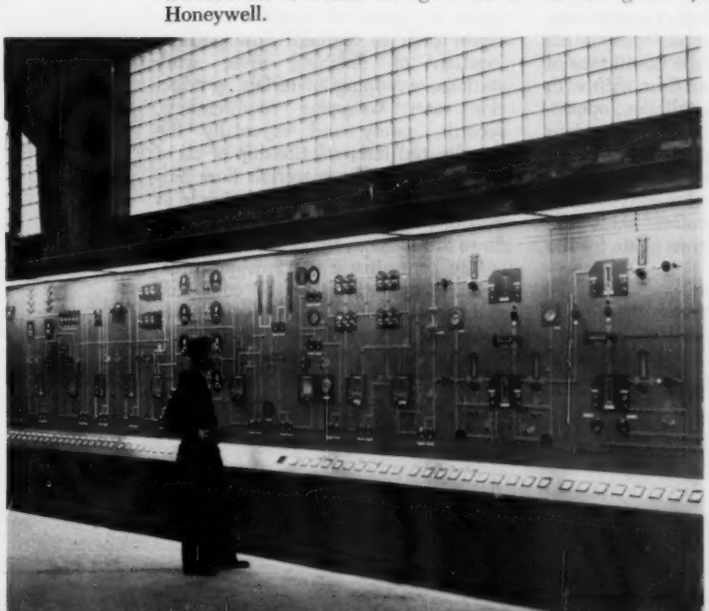
CONVEYORS CARRY LOGS from deck to be cut into 10 ft. lengths. Live rolls are driven by electric motors at right. Crane by Aarhus Maskinfabrik, Denmark.

OPERATING CENTER FOR TWO BARKERS, made by Sunds Verkstäder, Sundsbruk, Sweden. One barker is seen at left of center. Logs are then cut into 5 ft. lengths on slashers in background. Barked rejects go to sulfite mill.

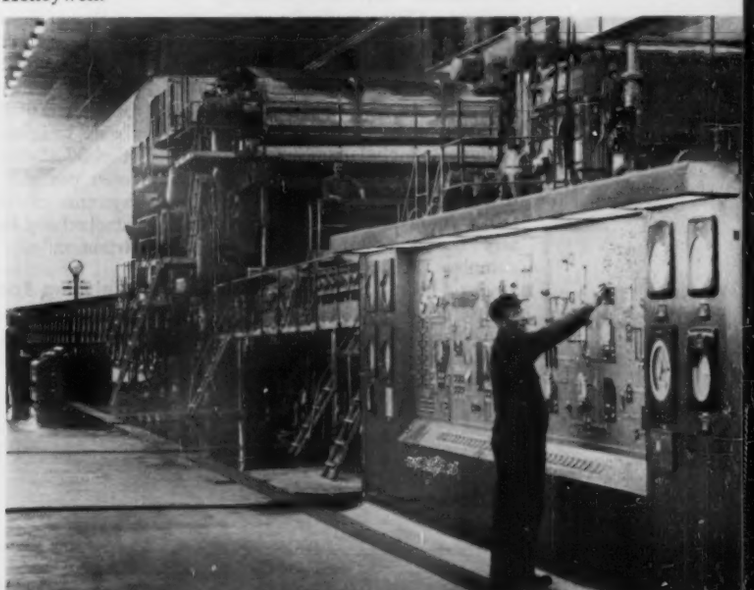


GROUNDWOOD ROOM has main operating controls (upper right) for four pairs of Tampella Great Northern automatic pocket grinders (made in Finland under license). Men are at individual mechanical stations.

CONTROL PANEL for groundwood screening is by Honeywell.



WET END PANEL for control of paper machine by Honeywell.



CONVERTING & FINISHING SESSION PARTICIPANTS (l to r) Henry Zachow, American Mfg. Co., Tacoma, Wash., John McMillan, Westminster Paper Co., New Westminster, B.C., Chmn. E. G. Weed, Crown Zellerbach Corp., St. Helens, Ore., Walter Esselstein, Bemis-Jason Corp., Redwood City, Calif., George Gustafson, Lamb-Grays Harbor Co., Hoquiam, Wash.

PAPERMAKING SESSION SPEAKERS (l to r) Edward Richter, Electric Eye Equip. Co., Sunnyvale, Cal., W. H. Youngchild, Georgia-Pacific Paper Co., Toledo, Ore., E. E. Zans, Potlatch Forests Inc., Pomona, Cal., Chmn. Glen D. King, Crown Z West Linn Div., Arthur Siegal, Selo Electric Co., Seattle.

PULPING PANEL SPEAKERS (seated l to r) Wm. J. Shelton, Georgia-Pacific Paper, Toledo, Ore., Chas. R. Seaborne Jr., Thilmany Pulp & Paper Co., Kaukauna, Wis., Herman Jorgensen, Pulp Div. Weyerhaeuser, Cosmopolis, Wash., Chmn.—kraft, L. D. McGlothlin, Crown Z Camas Div., (standing) Chmn.—sulfite, Thomas H. Grant, Publishers' Paper Co., Oregon City.

LUNCHEON SPEAKER, H. L. WOLLENBERG (standing), pres. of Longview Fibre Co., emphasizes need for acute observation. Seated at left—A. C. McCorry of St. Regis Paper Co., Tacoma, and 1st v.p. AP&PMSA; Howard E. Wehr, Mead Corp., Harriman, Tenn., pres. AP&PMSA, Henry W. Dauterman, Longview Fibre Co., Longview, Wash., Chmn. of Pacific Coast Div. AP&PMSA.

Labor and Cost Savings Dominate

papers given at first Supts. Division meeting in California. Thilmany, Geo.-Pacific, Weyerhaeuser, Westminster mills report.

By LOUIS H. BLACKERBY
Western Editor, PULP & PAPER

● Modern converting-finishing operations differ markedly from the former heavily staffed departments. Although neither finishing or converting is yet on a full "pushbutton" basis, it is closely approaching that state.

Finishing room automation accomplishments include continuous layboys providing trimmers with packages of desired height, air-film distribution tables connecting trimmers and tributary finishing lines, paper stackers complete with infeed and outfeed conveyors, spear stackers for handling quartered skid loads and cartoning lines complete with filling, taping and stacking units, according to Henry E. Zachow, project engineer of American Manufacturing Co.

He reported to the Pacific Supts. session that an automated system consisting of these production components has been built to handle 30-40 tons of mixed production in an 8-hr. shift with a 7-man crew. The installation, operating on coated book stock of various basis weights and grades, turns out the 30-40-ton volume "with 12 less men per shift than the conventional system in which cutter skids are stacked and broken down again for the trimmer."

Finishing Room Engineering

G. W. Gustafson, chief engr. of Lamb-Grays Harbor Co.'s. roll finishing div., placed heavy stress on engineering the finishing room system. Discussing roll handling and packaging, he said, "consideration must be given to industrial engineering principles such as material flow pattern, location of finishing area, work stations, wrapping materials, production rates, wrapping requirements, records, safety and especially the coordinated inter-relationship of all of these factors. The materials flow pattern should be as direct and simple as possible. Crossovers and reversing flows are to be avoided.

"By centralizing the finishing area, separate operations can be combined and accomplished with fewer man hours by improved methods. Definite work stations, carefully designed and fully coordinated enable the operator

to perform his duties with a minimum physical movement."

Mr. Gustafson, in emphasizing the importance of detail consideration, pointed out that a pushbutton control station (1) must be properly located for operator convenience; (2) must have the necessary number of control members; (3) each pushbutton must be strategically located and (4) be of appropriate type.

As to shape he says a button to be "actuated for every cycle should have a mushroom head and be located in the most easily accessible spot so the operator doesn't have to look for it. A pushbutton which requires mental decision in selection should be flush mounted in logical sequence. An emergency stop button should be of the mushroom type critically located to suit the operator's automatic reflex in the event of emergency."

Converting at Westminster Mill

John McMillan, technical director, Westminster Paper Co., Ltd., New Westminster, B.C., an affiliate of Scott Paper Co., producing Scott brands, said its converting end employs 100 men and 120 women. It produces 76 mill brands and 126 private brands on 32 machines. Toilet rolls are packaged on the main floor; napkins, roll towels, on the top floor, and all waxing, cutting, and supercalendering is carried on in the basement. All three divisions lead to two casing machines on one floor where they turn out from six to nine thousand cases of finished products a day.

Westminster has a consumers' representatives department, responsible directly to the president through the production division. Consumers' representatives regularly inspect the machines and report any lack of quality. Product quality testing is not a policing job—it is simply to keep management advised on quality. Personnel must be given a concept of quality; apparently this is something that is continually worked on in one way and another, "almost the way a minister works on his church members regarding sin."

Quality concept may at times cause high waste, but Mr. McMillan reported that a study of those production problems showed they could be solved.

Planning meetings are held between the production and the technical director and the consumers relations each Tuesday, when the program for all machines and personnel is laid out for the following week, after learning the sales requirements. This must be coordinated with vital supplies involved in long-range planning. By Thursday the program is considered permanent

Converting Quality and Costs

"Poor communications is one of the biggest problems hindering progress" in the converting field, according to Walter D. Esselstein, vice pres.-manufacturing for Bemiss-Jason Corp. Better understanding is needed between the converter and the paper producer. This presents a "language problem" because "one man's careful explanation all too frequently conveys a meaning quite different from what he intended."

When the average converter tries to tell the mill man about a particular quality he would like to have in his paper, "he often might just as well be talking a Patagonian dialect," says Mr. Esselstein. The converter should eliminate "the archaic idea that he is the sole owner and discoverer of secret processes that he dare not discuss with anyone." It is essential also that the converter keep his supplier informed of what he is doing.

Costs and Controls Feature Paper Session

The use, results and functions of Hurletron moisture control systems was presented at the papermaking session by Edward Richter, Western representative of Electric Eye Equipment Co. Such a system determines moisture content of paper on the machine by measuring, the drop in temperature of the sheet between a reference dryer and a point 2½ ft. after the dryer. It reportedly provides accurate control of moisture (plus or minus ¼ of 1% for tissue, newsprint, fine papers and linerboard, ½ of 1% for heavy sheets such as felt, pulp), minimizes the time required to bring moisture content to specifications, reduces breaks, cuts steam requirements and increases daily tonnage.

Each of the system's moisture gauges consist of two heat-sensitive heads containing thermocouples. One head measures surface temperature of the reference dryer, the other lightly touches the sheet to determine its temperature at that point. The drop between the two denotes moisture content which is profile recorded on strip charts. A second recorder notes moisture at any gauging locations.

Electronic inspection of paper, continuously over the entire web at speeds up to 2,000 fpm, was discussed by Arthur Siegal, Selo Electric Co., Seattle. This is the function of Detectron, an "electric brain" unit with sensing controls which can be set to determine specific allowable limits of imperfections. It reportedly can detect voids of micron size, and 0.0001 in. bumps as well as slime spots, creases, cuts and conductive particles.

Pacific Supts. Committee For 44th Annual Meeting

The 44th annual meeting of Pacific Coast Division of APPMSA was held in San Francisco, Calif., Dec. 4-6, at Hotel Sir Francis Drake. General chairman was Henry W. Dauterman, Longview Fibre Co., and chairman of the local committee was Hugh Bolger, Cameron Machine Co. Other chairmen: Arrangements—A. C. Perrin, Reliance Electric & Eng. Co.; technical program—Frank R. Hamilton, Simpson Paper Co.; finance—R. Burke Morden, Morden Machines; housing—Louis Meunier, AFP Corp., and E. W. Beardsley, Corn Products; registration—W. R. Brandt, General Dyestuff; transportation—Walter Christiani, Dorr-Oliver, Inc.; industrial tours—Neil Willestoft, Crown Zellerbach, and A. E. Gedman, F. C. Huyck & Sons; ladies' program—L. A. Brown, Albany Felt Co.; get-together party—Dean Brosche, Corn Products; wake 'em up breakfast—F. Thomas King, National Starch; and convention secretary—Kay Fralick, Morden Machines.

Pacific Coast Supts Elect New Officers

Newly elected officers of American Pulp & Paper Supts. Assn., Pacific Coast Div., are:

Chairman—Frank R. Hamilton, Simpson Paper Co., Everett, Wash.; First vice chairman—Glen D. King, Crown Z, West Linn, Ore.; Second vice chairman—Louis W. Pumphrey, Westminster Paper Co., Ltd., New Westminster, B. C.; Third vice chairman—Hugh Wicket, Weyerhaeuser Timber Co., Longview, Wash., and Secretary-treasurer—R. Burke Morden, Morden Machines Co., Portland, Ore.

Why Supts. Held First Meeting in San Francisco

The industry's lively growth and achievements in the Golden State were important factors in selecting San Francisco for the annual meeting of Pacific Coast Div., according to Chairman Henry W. Dauterman, Longview Fibre Co., Longview, Wash.

Authoritative reports on technical developments and operating techniques in pulping, papermaking and converting-finishing were presented by industrial representatives from a wide area, including the Lake States, British Columbia and the Western States. One day was devoted to industrial tours, with visits to the Crown Zellerbach Corp. and Fibreboard Paper Products Corp. mills in Antioch, Andre Paper Box Co. in San Leandro, and Schmidt Lithograph Co. plant in San Francisco. Nearly 400 people registered for the three-day session.

Unique Fan Pump at G-P Mill

Georgia-Pacific's new mill in Toledo, Ore., received special consideration in both the papermaking and pulping sections of the meeting. W. H. Youngchild, paper mill supt., discussed especially the primary fan pump.

"This fan pump, an Allis-Chalmers ACAP, is unique," he said, "although operating at full capacity, it sends only the required amount of water to the headbox, the balance being recirculated within the pump itself and does not need a throttling valve. It is remotely controlled from the machine-tender's station at the head box. Due to our wide range of weights and grades, we feel this pump is very helpful in the successful operation of our machine."

Operation Results Discussed in Pulp Session

Screening results achieved at the new Weyerhaeuser Timber Co. pulp mill at Cosmopolis, Wash. were presented by Supt. Herman Jorgensen. This MgO sulfite mill—latest of that type—uses Cowan Mark E screens for unbleached and bleached stock. The results, Mr. Jorgensen reports, are "very satisfactory."

Observations by him: For a given size of screen perforations, softwood unbleached stock appears to be best screened at 0.8% consistency, unbleached hardwood at 1.2%; to maintain good operation the minimum size screen perforations for unbleached fiber has been found to be 0.065, for bleached 0.080.

"The consistency of stock to the screens seems to be the most important variable in the entire screening operation. In nearly all cases the best dirt removal occurs at the highest practical supply consistency."

Results at Cosmopolis of screens made of different metals: Monel—satisfactory re breakage but they corrode at under 5.5 pH; stainless—corrosion resistant but were found to be easily broken until modifying the headbox design to stop air entrainment and lowering inlet velocities; aluminum bronze—more resistant to corrosion than Monel, no breakage in a year of use; chrome plating—seems to be corrosion resistant.

Thilmany Report on Savings

Savings potential of $600 per day through inexpensive adaptations, made at Thilmany Pulp & Paper Co., Kaukauna, Wis. were described by Chief Engineer Charles R. Seaborne Jr. Because of extensive expense required for heating water at this plant (the normal use rate of 1,300 gpm constituted a heating load of over one million btu per minute at 78¢ per million btu cost) the firm set out to (1) reduce steam costs and (2) relieve steam demand on the power plant.

Subsequent to conducting pilot plant studies, Thilmany developed plans for a system designed to utilize heat of the entire 100,000 cfm exhaust gasses from the recovery boiler. Half of the system was installed and has been operating successfully for nearly two years. The company now plans installing the other half.

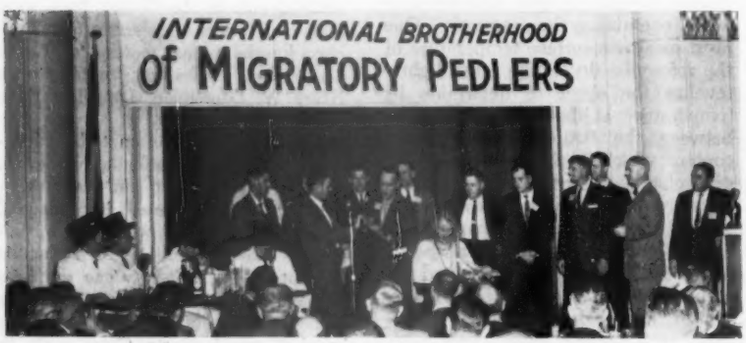
The existing installation consists of one of two discarded digester bodies, equipped with a conventional Peabody single-stage scrubber, for utilizing exhaust-gas heat for heating process water. The water flows horizontally over the perforated stainless tray of the scrubber. Flue gases travel upwards through the perforations and mix with the water. The water is thusly heated; the cooled and partly condensed flue gas goes up and out the stack.

All water used for pulp washing in the brown stock system is heated in this recovery tank by utilizing waste exhaust-gas heat, according to Mr. Seaborne. Since the heat load has been reduced to this extent "the water heated by digester blow gases is being used for white water heating on our glassine machine," he told the superintendents. This facilitates providing the machine with 400 gpm of cleaned hot water for glassine production—results in a significant reduction of steam for heating white water.

Makeup water for the power plant is also heated by the heat-recovery system. Part of the effluent water from the heat recovery system flows through a heat exchange, to heat raw makeup water, and then returns to recovery.

The company plans doubling the system's capacity in the near future. It then expects to be able to provide a 100°F. water temperature increase for 1,300 gpm at a cost of 36¢/million btu compared to the original 78¢/million.

NOT ALL PAPERMAKING when two radio "hams" get together: (l to r) Carl E. Braun (W7HRV), West Linn, Ore., retired after 25 yrs. with Publishers' Paper, Andy Perrin (W6UQT), Regional Sls. Mgr., Reliance Electric, Burlingame, Calif.



PEDLERS' WAKE-EM-UP SKIT, conducted by Waiting Room No. 1 of Portland, depicts novel mill for making pulp from buffalo chips. Crew members (standing), who have been interviewed and hired, are Calif. sales representatives accepted as charter members of newly formed Bay Area chapter. At microphone—International pres. Gordon Petrie, of Black-Clawson, Portland, Ore., presents charter to Andy Perrin of Reliance Electric & Eng. Co., Burlingame, Calif.

New IBMP Waiting Room Is Formed in San Francisco

The International Brotherhood of Migratory Pedlers activated a new chapter—Waiting Room No. 7—at the San Francisco meeting. Newly initiated members include President Hugh Bolger, Cameron Machine, T. A. Bailey and E. W. Beardsley, Corn Products Sales, Walter Brandt, General Dyestuff, Lowell Brown and L. A. Brown, Albany Felt Co., Charles Chapman, Hercules Powder, Walter Christiani, Dorr-Oliver, J. B. Critchlow, A. C. Perrin, Reliance Electric, A. E. Gedman, Huyck Felt, L. G. Maclise, Dow Chemical, M. L. McCord, General Aniline, F. L. Rhoads, Flox Co. An affiliate of the group is L. K. Smith, v.p. of PULP & PAPER's publishers, a life member of IBMP.

Future Land Of Big Mills

Swedish Financier May Build Soon

• One of the world's major new virgin timber areas for large pulp mills and other great industries may soon be opened to development.

This is a little known and extensive timber frontier of northern British Columbia in western Canada, where there are stands of 200,000,000,000 bd. ft. (equal to about 400,000,000 cords or 1,448,000,000 cubic meters). One of several groups very much interested in this region is the Swedish financier, Axel Wenner-Gren.

Establishment of big pulp mills and smelters will probably be among the first results of a multi-million dollar hydro-electric development, now in its preliminary engineering stage, backed by Mr. Wenner-Gren and a group of major corporations including B. C. Electric Co., largest public utility company in western Canada.

The Wenner-Gren interests have already spent $6,000,000 on surveys of the so-called Rocky Mountain Trench area in anticipation of the construction of a giant hydro-electric dam on the Peace River designed to produce in excess of 4,000,000 horsepower. As a part of what has been described as "the world's greatest waterpower project," a 200-mile lake would be created. Transmission lines would carry the power from the plant, probably near Finlay Forks, to industrialized southwestern British Columbia and elsewhere.

Although the project has been criticized in some quarters on the ground that it may create a monopoly of natural resource development in one part of the province and that there is still some question as to whether delivered cost of power from Peace River to Vancouver will be economically competitive, the British Columbia government has given it full support, and the newly announced partnership with B. C. Electric Co. and other big engineering and electrical companies has given the enterprise a guarantee of stability.

Present Allowable Annual Cut

Presently in this northern timberland, only about 630 million bd. feet are being cut by some 700 sawmills, many small family-type operations. Annual allowable cut would be about 900 million bd. feet (1,800,000 cords or 6,516,000 cubic meters).

Mr. Wenner-Gren has a contract with the provincial government (which owns almost 100% of the timber) to perform surveys and he must make a decision on his plans by 1960. He has been reported planning a pulp mill in the Rocky Mountain Trench (in the Finlay and Parsnip drainages) or in the Peace River section around Fort St. John (see map for location of these areas).

Western Plywood Ltd., Quesnel, B.C., also plans some day to build a pulp mill in northern British Columbia. It has a Tree Farm cutting license with the provincial government which contemplates such a mill. In recent years, there have been periodic reports of other interests planning on pulp mills in this area, especially in the vicinity of Prince George.

At present the nearest interior mill is North Western Pulp & Paper Ltd. market bleached kraft pulp mill at Hinton, Alberta, built and operated by St. Regis Paper Co. with 430 tons per day capacity (made in two Kamyr continuous digesters). Alberta West Forest Products Corp. is planning a 300-ton kraft pulp mill near Edmonton, Alberta. Both of these sites are across the Rockies, east of Prince George. Westward, on the coast, are the Columbia Cellulose (Celanese Corp.) mill at Prince Rupert, B.C., and Ketchikan Pulp Co., at Ketchikan, Alaska.

Half of Timber is Spruce

Half of the timber in the Prince George Forest District west of the Rockies is white spruce—over 105,000,000,000 bd. ft. Prince George calls itself the "White Spruce Capital of the World." About 35 billion bd. ft. is lodgepole pine and another 35 billion is balsam fir. There is an additional 22 billion bd. ft. of other mixed species. The district contains 50 million acres, of which three-fifths is productive forest land. Two railroads serve the area, the Canadian National and Canadian Pacific, both meeting at Prince George. Improved highways have been built.

This timber is protected, administered and sold in public sales by the British Columbia Forest Service. There are seven Tree Farm licenses issued or awaiting issuance to large timber operators for renewable periods of 21 years. Smaller sales are made to sawmill operations for one to five years.

Loggers have their big season in the winter when the ground is frozen. When the snow melts the ground is virtually "bottomless" with muskeg

and debris. It is estimated it costs $500 to $3,000 per mile to build roads. Some permanent access roads are being built by the B.C. Forest Service.

Minimum stumpage rates for spruce-pine average about $5 per 1,000 bd. ft. (two cords). Average log diameter is 12 to 18 inches and average length is 16 ft. Lodgepole pine comes back strong in burned off lands. Merchantable timber averages 15 to 20 thousand bd. ft. per acre. Annual growth run from 150 bd ft. to 300 bd. ft. per acre. Age of mature stands average about 140 years. There are few areas that have not been burned. Lodgepine pine is managed on a rotation age of 80 years.

In most of this area, the rivers flow north to the Arctic Ocean.

Wenner-Gren Interests' Directors

A distinguished board of directors, headed by Viscount Alexander, former governor-general of Canada, has added prestige to the Wenner-Gren interests' new Peace River Power Co., organized to continue development work based on the earlier reports of the British Thomson-Houston Co., world-wide engineering company. Chairman of the board is Sir Andrew MacTaggart, responsible for hydro-electric developments in Scotland, Italy, India and East Africa. The board includes Lord Tweedsmuir, son of a former governor-general of Canada; Ralph Chantrill, consultant with British Thomson-Houston; W. W. H. Hill-Wood, senior partner of Morgan Grenfell & Co., London; Birger Strid, chairman, Wenner-Gren Foundation; and Senator S. S. McKeen.

W. C. Mainwaring, long-time vice president of B.C. Electric Co., is president of Peace River Power Co.

"If continued engineering studies substantiate preliminary findings," said Mr. Wainwaring, "the biggest power project in the world will result. A large pulp mill would almost centainly be developed, and in its early phases would utilize timber from the area that must be flooded behind the power dam. There also may be metallurgical and petrochemical industries.

"A dam yielding 4,000,000 horse power could be built on Peace River. Another 4,000,000 horsepower could be developed even more cheaply on Peace River as a result of the initial dam."

This compares with a total output from Grand Coulee of 2,645,000 hp and from Hoover Dam of 1,670,000 hp.

Simpson Rebuilds No. 3—to be "Fastest Fine Paper Machine" in Far West

Management at the Simpson Paper Co. plant at Everett, Wash., has now inaugurated production on its "new" No. 3 machine by Dec. 1. The crash program making this possible called for resuming operation just seven weeks after shutting down old No. 3.

After actual physical removal, the machine was being "rebuilt from the ground up" and re-installed as a modern, fast machine of 30% higher production capacity, according to M. W. Olson, resident engr. It's the culmination of a $3 million modernization program at the Simpson plant. The finished installation is expected to be the fastest fine-paper machine on the West Coast and will be the only one with fully-enclosed dryer hood extending clear to the floor.

Simpson Paper's production and engineering staffs together planned the project and did the general design work. Participants, in addition to Mr. Olson and proj. engr. John Gould, include Bill McKenzie, formerly resident engr and now chief engr. of Simpson Timber Co., H. R. "Rad" Russell, paper mill supt., and F. R. Hamilton, now director of research and product development. H. A. Simons Ltd., Vancouver, B.C., was consulting engineer.

Speed is Being Doubled

Mechanical speed of the machine is being doubled—from the previous 750 to 1500 fpm, the number of 60-in. dryers increased from 31 to 48, and new production components added throughout the No. 3 system. Beloit Iron Works functioned as prime supplier.

Equipment includes Black-Clawson Selectifier screens, Beloit pressure headbox and Fourdrinier (the 155-in. wire to be 105-ft. 8-in. long compared to the previous 70-ft.); second suction press converted to an inverted press; a new breaker stack installed between 1st and 2nd dryer sections; new size press between 2nd and 3rd dryer sections, immediately preceded by one of the former machine's calender stacks installed as a means of smoothing out the sheet prior to sizing or coating on the press. A Beloit reel has been purchased for installing behind the final calender.

A Beloit differential lineshaft drive, powered by 1,000 hp General Electric turbine, is to power the entire machine.

First and 2nd dryer sections are to be totally enclosed by a Ross-Hooper insulated, aluminum hood for uniform sheet drying.

A Liebeck pulper (E. D. Jones & Sons Co.), located beneath the final calender, was one of the first units installed. This continuous extraction component replaces an old beater for processing dry-end broke.

To better supply the machine, two 8 by 10-ft. Impco washers have replaced old units in the bleach plant which have previously been one of the limiting factors in production. Agitation equipment and mining nozzles, by James Brinkley Co., are being added in the high-density tanks for more effective storage and increased through-put, according to Mr. Olson.

Another factor in this major expansion project is the complete modernization of the de-ink plant. Two Morden Slush-Makers (a primary and secondary) are to be included for pulping magazines, sidehill washers are being enlarged. When completed, capacity of the de-ink plant will have been more than doubled—from 33 to 70 baled-weight tons per day.

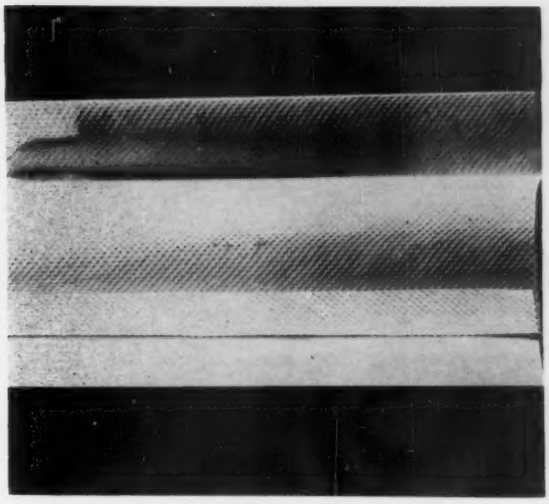
Corrosion Controllers Set Up Sales Arrangement

Corrosion Controllers, Inc., manufacturer of fiberglas-reinforced polyester industrial products at Camas, Wash., sets up national sales arrangements according to pres. Chuck W. Kellogg Sr. Mead Pulp Sales Co. Inc. has exclusive representation east of the Mississippi River for moulded fiberglas ventilation hoods—the first of which was installed last summer at Columbia River Paper Mills, Vancouver, Wash. Walter A. Salmonson Co., Portland, Ore., has exclusive representation for Corrosion Controllers products in California, Idaho and British Columbia. The company directly handles sales of its products in Oregon-Washington.

Hanchett Mfg. Builds New Center in South

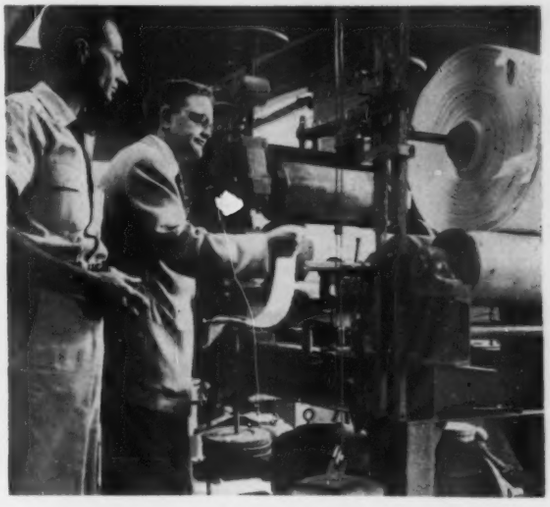
Hanchett Mfg. Co. of Big Rapids, Mich. and Portland, Ore., announces construction of a new branch office, factory and warehouse at 5th Ave. South and 31st St., Birmingham, Ala. Complete stocks of all Hanchett products, such as saw sharpeners, knife grinders, saw swages and swage shapers will be maintained. Trained service men will be available to purchasers of new Hanchett grinders.

How Scott Paper Co. Invented New Paper Shown in Pictures



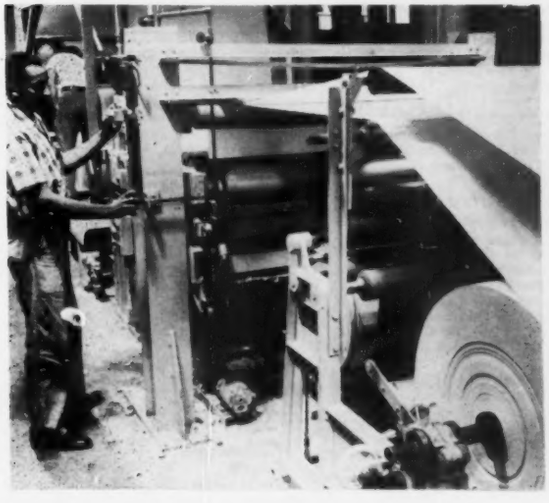
1. Perf-Embossed Paper—a New Product

Close-up shows pattern of this ultra high absorbency (UHA) towel developed by Scott Paper Co. Originally designed for oil absorbent and industrial wiping, it is expected to have other uses. The U.S. patent office recently awarded Scott a patent on the paper and the process, which both perforates and embosses the sheet. Scott Dura-Weve, laminated paper and rayon scrim, is now made with this perf-embossed paper.



2. First Made on This Experimental Machine

One of the inventors, Richard W. Schutte, of Scott research staff, strips a piece of perf-embossed paper from this press to examine pattern made by two engraved rolls. These rolls simultaneously perforate, weld and emboss the plies of paper fed between them. The process differs from ordinary embossing in that matched, mating male rolls are used. Most paper being processed remains uncompressed—therefore has high absorbency.



3. Now Made on This Production Unit

The operator is manipulating the draw control on the feed rolls to coordinate the rates of speed for the two plies. In this process, the parent roll of paper is 43 inches wide. One of the inventors made the first sheet by pressing it between heavy window screens. The screens are replaced on this machine by engraved rolls. These rolls give high cross-directional stretch—a goal of paper experiments for many years. Stretch and strength are equal in all directions.

4. Product Is Approved by Scott Officials

From left: Paul C. Baldwin, v.p. in charge of mfg.; Charles D. Schneider, sales mgr., Dura-Weve, and G. Willing Pepper, v.p. in charge of industrial distribution, okay samples at Dura-Weve plant, Chester, Pa. Better than shop cloths which build up bacteria and trap metal particles, even after laundering, this new wiper is safe, economical, absorbs and holds oil, has positive welding of plies, also bulk (protects workers' hands) and moldability.

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It's a Pusey & Jones Dryer

We regret an error in our December issue article "Special Report on Hudson Tissue" in which the 12 ft. Yankee Dryer was erroneously identified. This dryer was supplied by the Pusey & Jones Corp. to Hudson Pulp & Paper Corp. and was removed from another of their machines. It was not a Rice Barton dryer, although, other equipment was by R-B.

Ross Engineering Moves To Chicago Suburb

After 28 years in the same address in downtown Chicago, the J. O. Ross Engineering Corp.'s Western Division is moving into its new cream-colored brick one-story home at 320 School St., Mt. Prospect, Ill., right after New Years' Day.

The new location is 26 miles northwest of the Chicago offices. Over the years, the Ross staff has grown so rapidly, that it was bulging at the seams of the old offices. About 50 persons will move into the new building. There will also be four representatives of affiliated John Waldron Corp., for its machinery and coupling divisions.

The Ross staff—engineers, draftsmen, purchasing, service, etc.—is under Les Janett, western regional manager.

DRAMATIC MOMENTS IN PAPER-MAKING PROGRESS

What can match the thrill of the first run on a new paper-making machine? *Only 90 minutes after the first start-up, press-ready paper was produced at Southland Paper Mills, Lufkin, Texas* on a new Pusey and Jones Fourdrinier machine.

This new machine was a huge, 270-inch wire-width Fourdrinier, the third complete paper-making machine designed, built and installed by Pusey and Jones for Southland. It typifies Pusey and Jones' ability to provide on-time start-ups for paper mills the world around.

Top photograph: *Wire of new Southland machine being moved into operating position as it rests on the power-operated undercarriage of Pusey and Jones' Rapi-Drape Wire Changing Device.*

Bottom photograph: *Overall view of new Southland Paper Mills machine.*

Data on Southland's New Fourdrinier Machine:

Wire Width, length and speed: *270" wide x 118' long. Speed: 2500 f.p.m.*

Number of presses: *Two 42" diameter main suction press rolls, complete with vacuum pickup.*

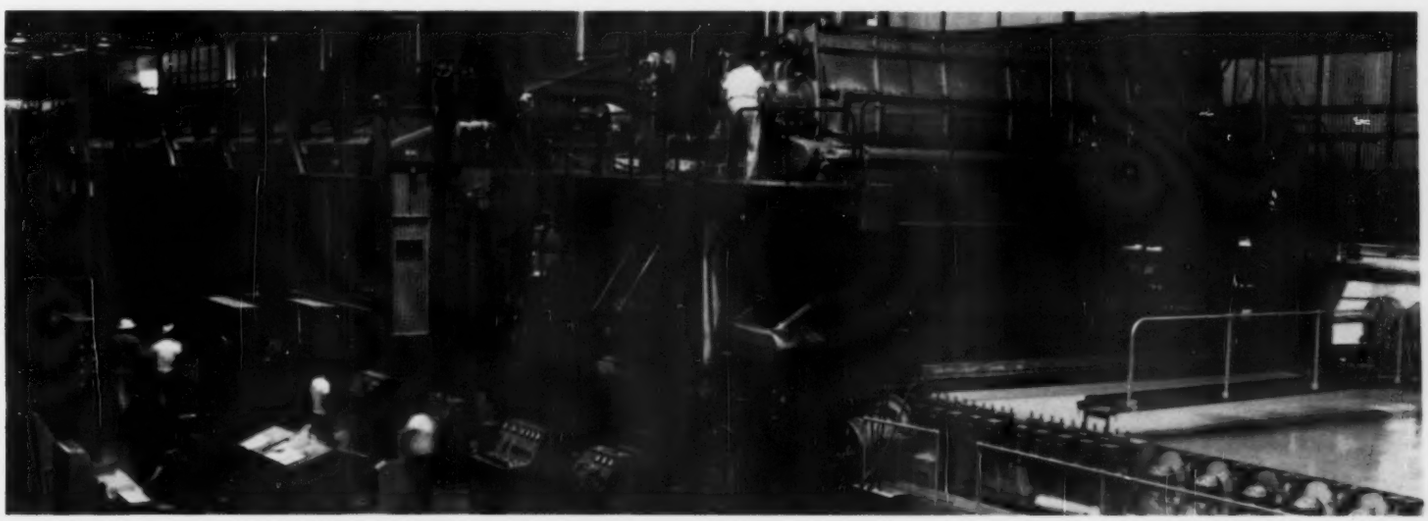
Dryers: *53 main paper dryers; one sweat dryer; 8 felt dryers, 60" diameter x 268" face.*

Calendar stacks: *One, 8-roll with 40" diameter bottom roll, 26" diameter next-to-bottom roll, and six 18" diameter intermediate and top rolls.*

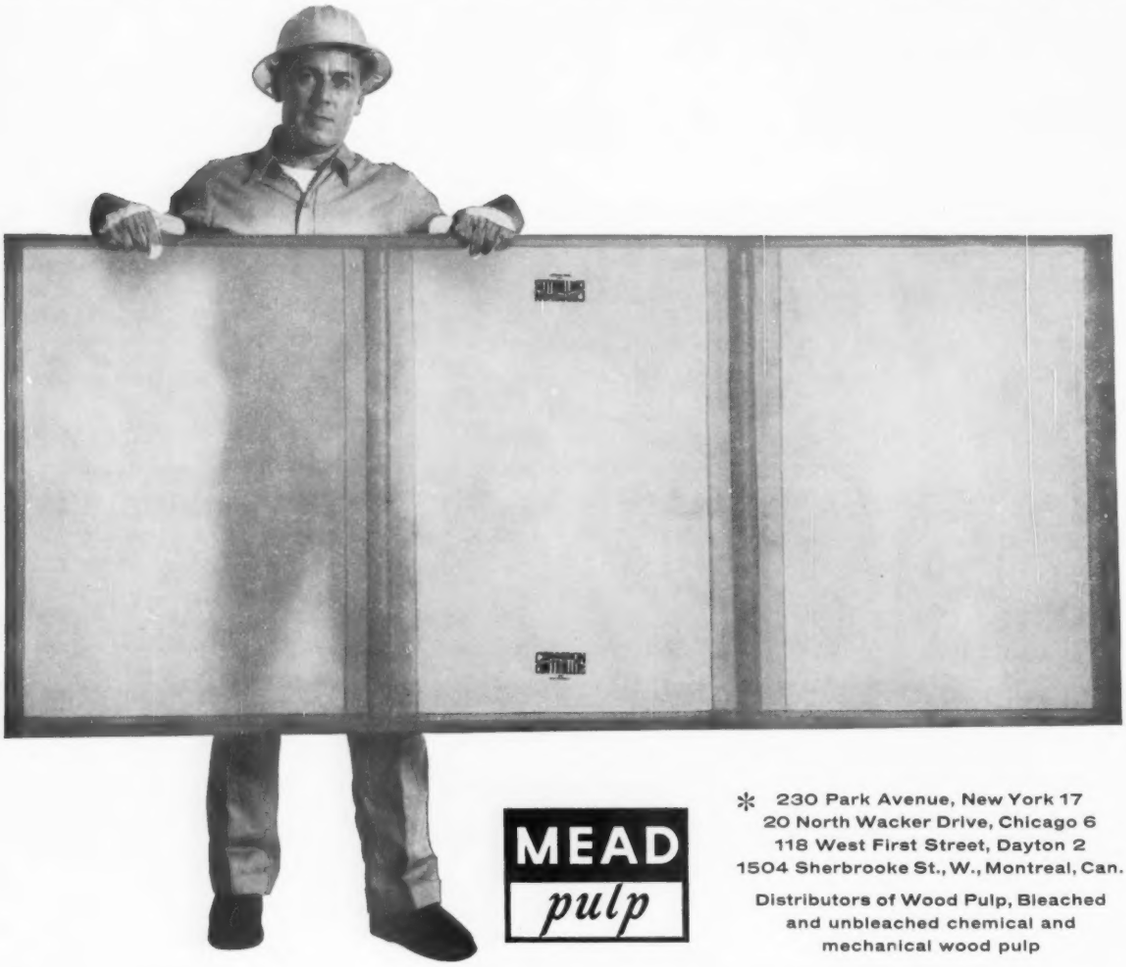
Reel: *Latest horizontal, uniform-speed type.*

THE PUSEY AND JONES CORPORATION

WILMINGTON 99, DELAWARE



MEAD PULP SALES, INC. is pleased to announce its appointment as sales agents for FIBERGLASS PAPER MACHINE HOODS manufactured by Corrosion Controllers of Camas, Washington ■ Fiberglass is a new concept in paper machine hoods ■ It eliminates corrosion and condensation problems, costs less to install and maintain ■ Completely dust free, easy to clean ■ Costs no more than other materials ■ For information, contact the Mead Pulp Sales, Inc. office nearest you.*



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Cut disconnect-reconnect time by as much as 50%

The FALK Spacer Coupling is specially designed for quick installation or removal *without disturbing the driving or driven unit*. This feature can save you up to 50% in disconnect-reconnect time when critical equipment—a process pump, for example—needs repair or replacement.

Here's another saving: with the FALK Spacer Coupling, you can quickly realign shafts *without the usual loss of operating temperature!*

And still another: you can remove or reinstall the FALK Spacer as a unit *without draining the lubricant.*

Because of its exclusive grid-groove Steelflex design, the FALK Spacer can accommodate residual misalignment—parallel, angular, or (most important) *both*. Also, it provides torsional resiliency that cushions shock and vibration. Thus it saves wear-and-tear on your connected equipment.

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MANUFACTURERS OF QUALITY GEAR DRIVES AND FLEXIBLE SHAFT COUPLINGS

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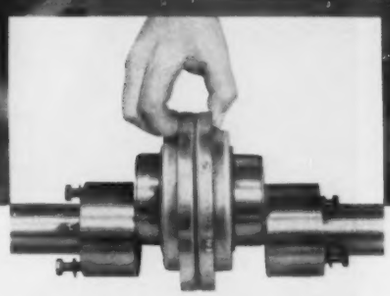
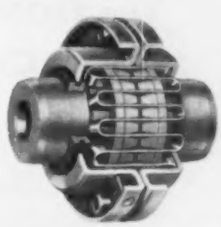


EASY AND QUICK TO INSTALL, DISCONNECT OR RECONNECT

First, mount shaft hubs to allow proper distance between hubs; then, align driving and driven units.

Second, compress Spacer to fit space between hubs and tighten cap screws to pull spacer hubs into the registered fit.

To disconnect, reverse the second step. No draining of lubricant necessary.

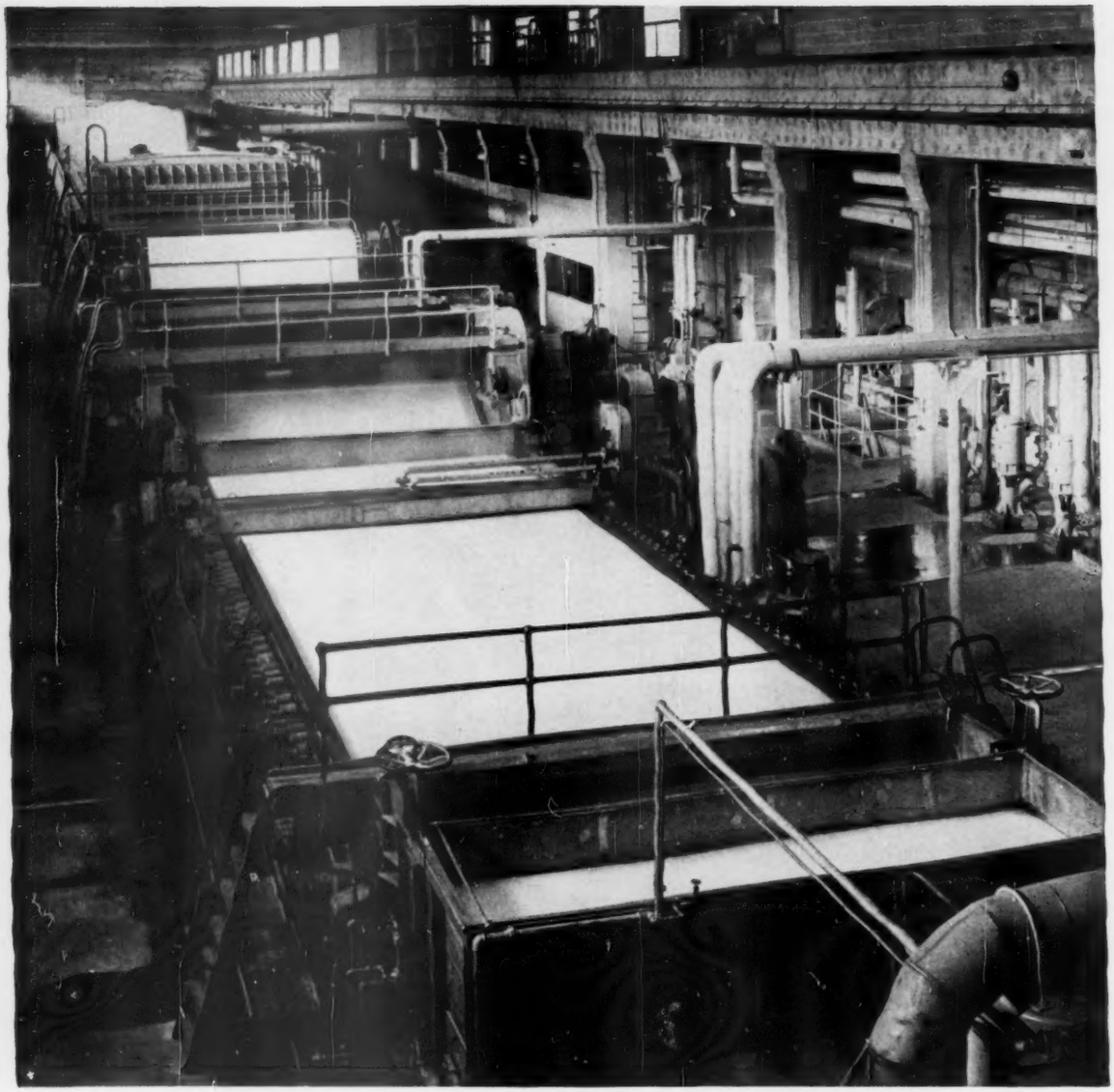


The heart of the FALK Spacer ...the basic Type F Steelflex

Write for Service Manual 4838

FALK

...a good name in industry



The **DOMINION PULP DRYING MACHINE** at
British Columbia Forest Products Limited, Crofton Mill

178-inch wire width machine equipped with
Minton Vacuum Dryer — Rated capacity: 525 tons per day

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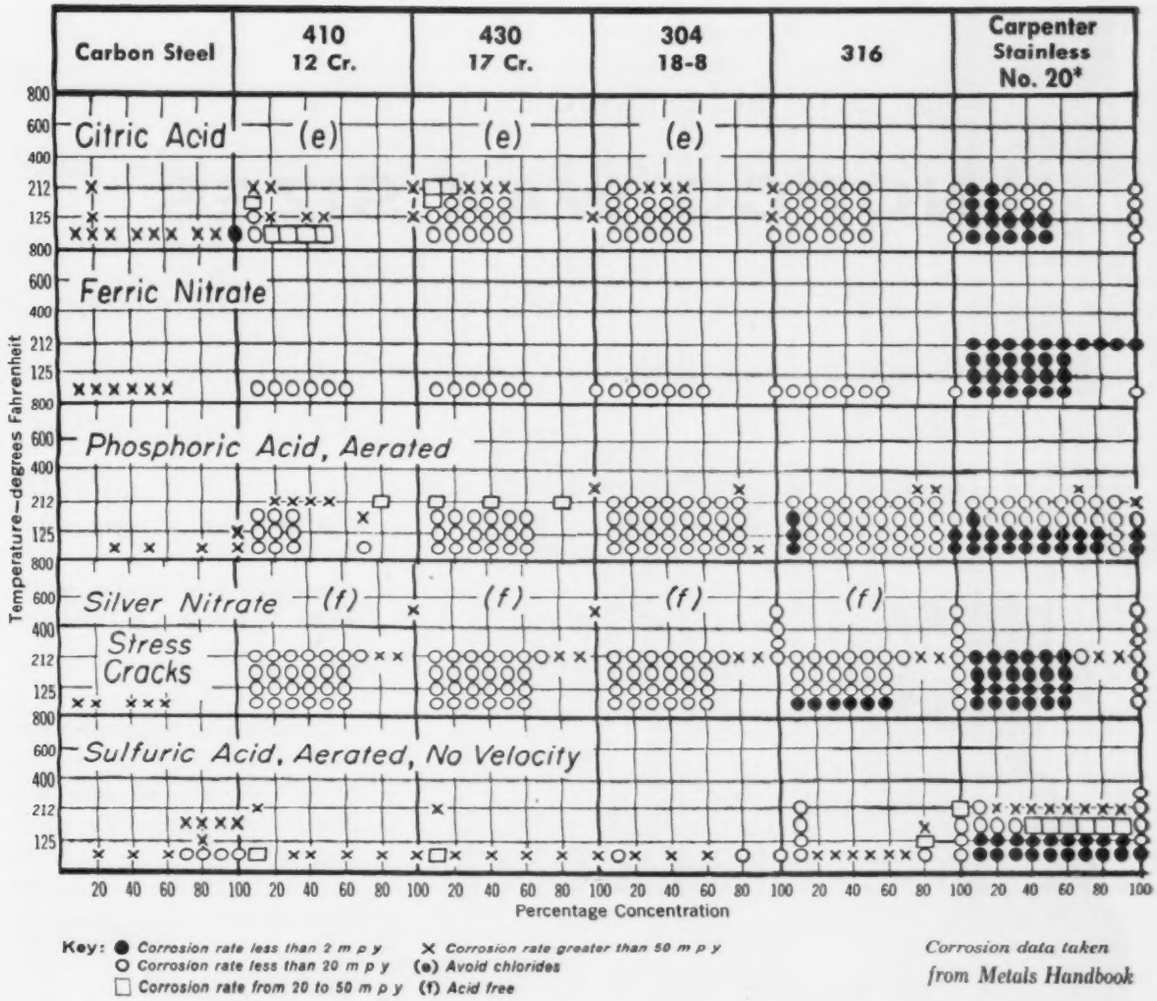

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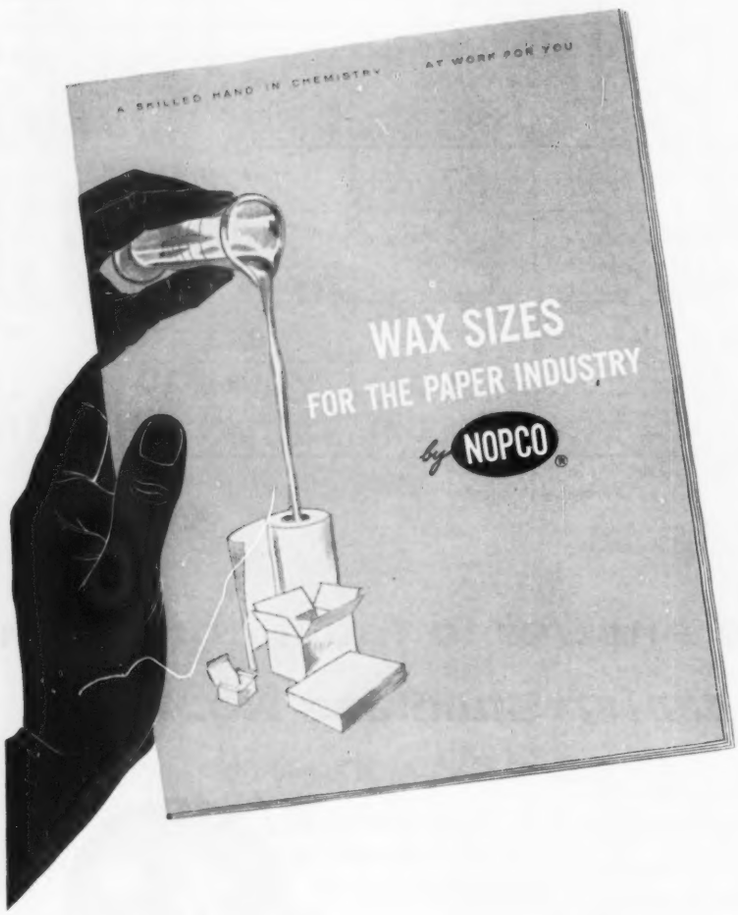

Whatever type of paper, paperboard or fiberboard you produce, your sizing problems can be lessened by use of a Nopco-developed wax size.

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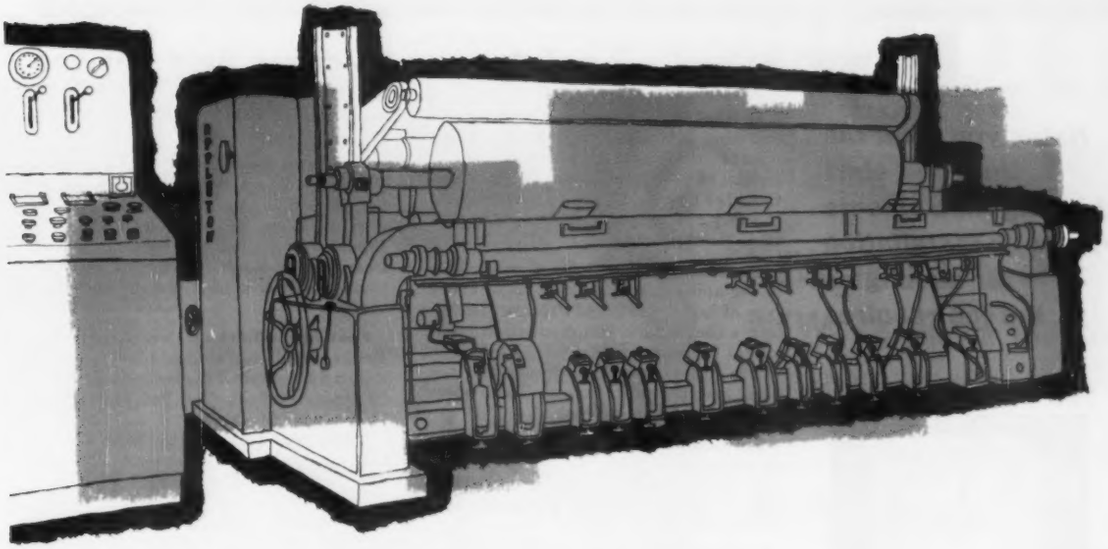

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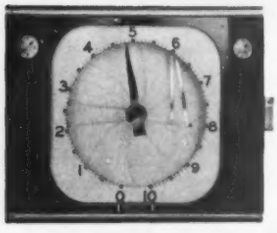

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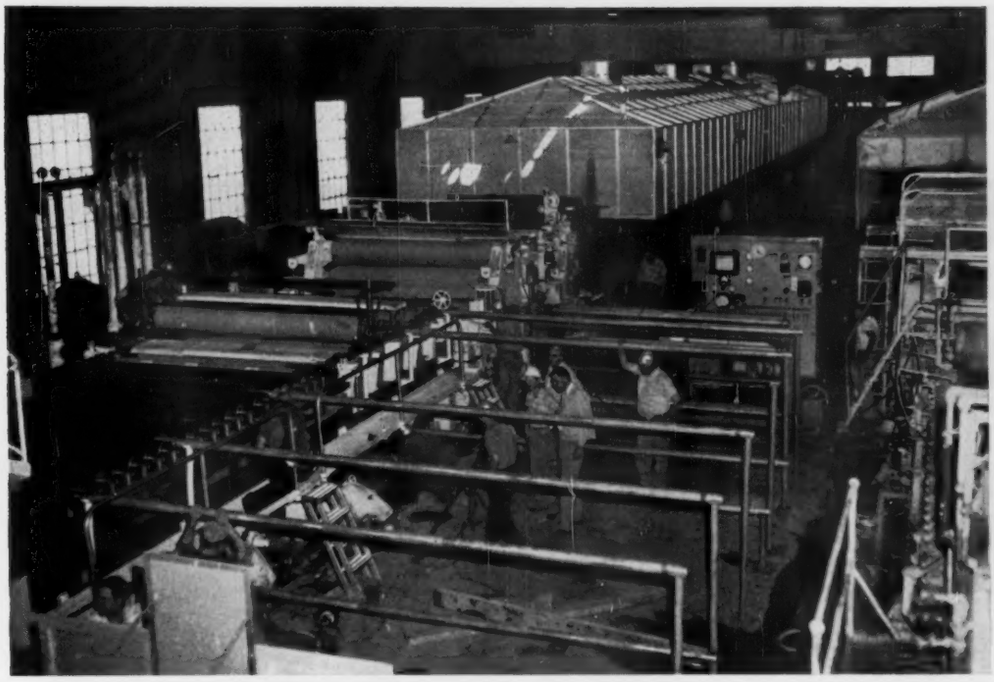
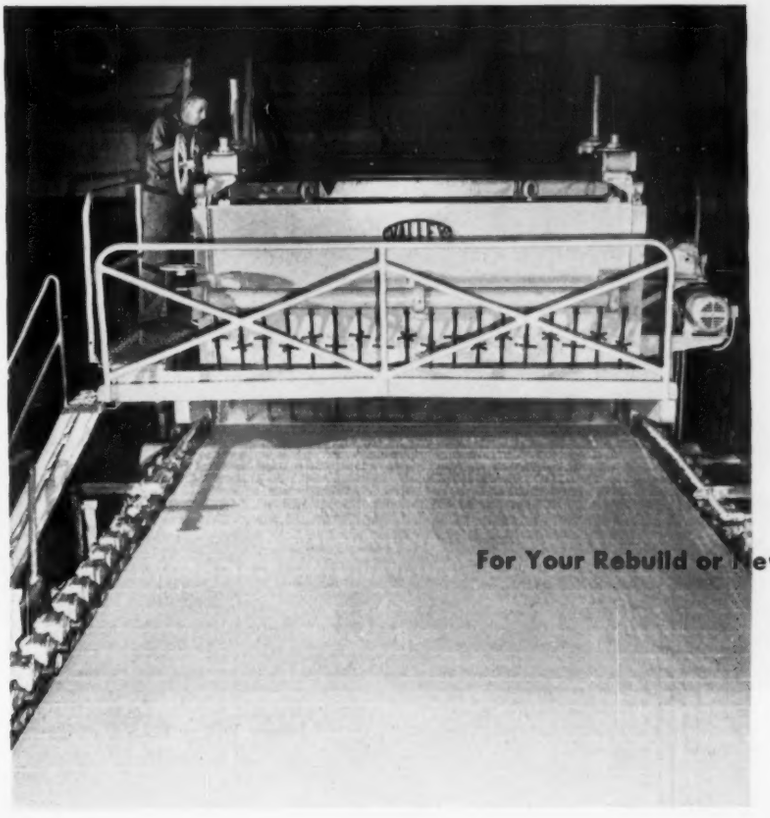


Finished Wet End With Wire Stringing Rig.

NO. 4 MACHINE AT MEAD CORP.
Kingsport, Tennessee

Another Paper Machine is Rebuilt by

VALLEY



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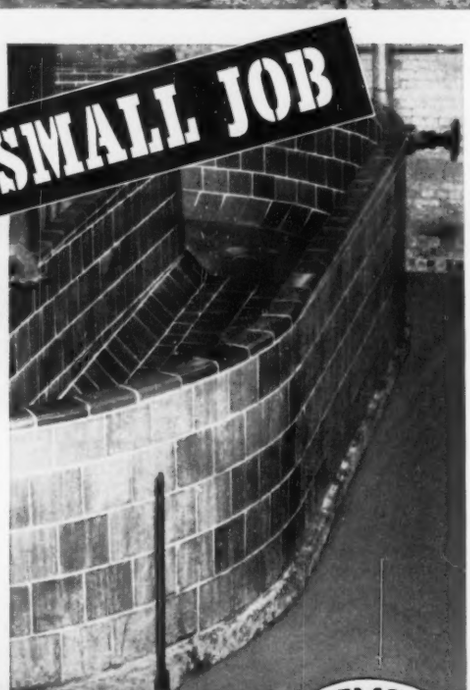

Any job—from the very largest to the smallest—can be installed by Stebbins under a simple contract which covers everything from the original design, which is based on a full knowledge of the chemical, physical and mechanical requirements, to the finished job ready for use. Maintenance can also be included. As proved by the experience of leading mills throughout the country, you can rely completely on Stebbins service.

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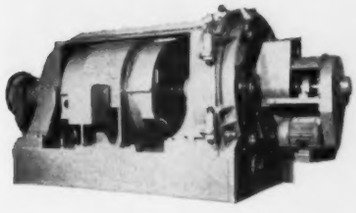


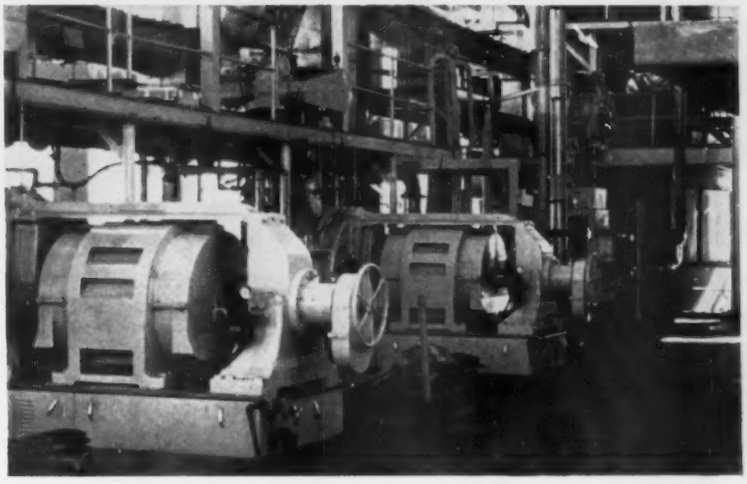
COLD CAUSTIC FOR TISSUES

At the Ninth Congress of the Association Technique de L'Industrie Papetiere held in Strasbourg, France in the spring of 1956, a technical paper was presented describing research studies which indicated the practicability of producing sanitary papers from poplar pulp by means of the cold caustic process.

Just about a year later the first commercial installation was underway at Cartiera Vita Mayer & Company, Milano, Italy. Production of 30 tons per day on a continuous basis was reported.

The logs are debarked, chipped, screened and then brought in contact with the caustic solution. Temperature is maintained at 40°C. Liquor to wood ratio is 16:1 and treatment time is about 10 minutes. Pressing is accomplished in three stages and is followed by refining in precision-built 36-2 single disc "Sprouts."

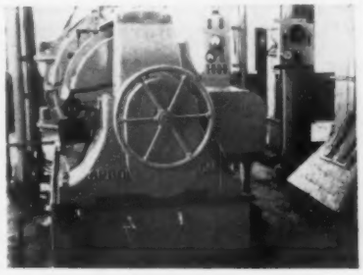
According to Vita Mayer, the cold caustic process offers them simplified control, continuous production, high yield and low cost. **For the full Vita Mayer story, ask for Better Fibers Report No. 26.**



Three Sprout-Waldron single disc refiners helping to produce 50 A. D. Tons/Day of cold caustic furnish for newsprint. Since this picture was taken, three additional "Sprouts" have been installed . . . capacity is now rated at 80 A. D. Tons/Day.

COLD CAUSTIC PULPING FOR NEWSPRINT

Behind the technical story of successful cold caustic pulping, soon to be revealed by Australian Newsprint, is the superb performance of three 36-2 500 hp "Sprouts." Refining of eucalyptus woods for use in newsprint is being accomplished at 50 hp days per O. D. ton. Consistent yields of 90% are being achieved. The CSF is 150.

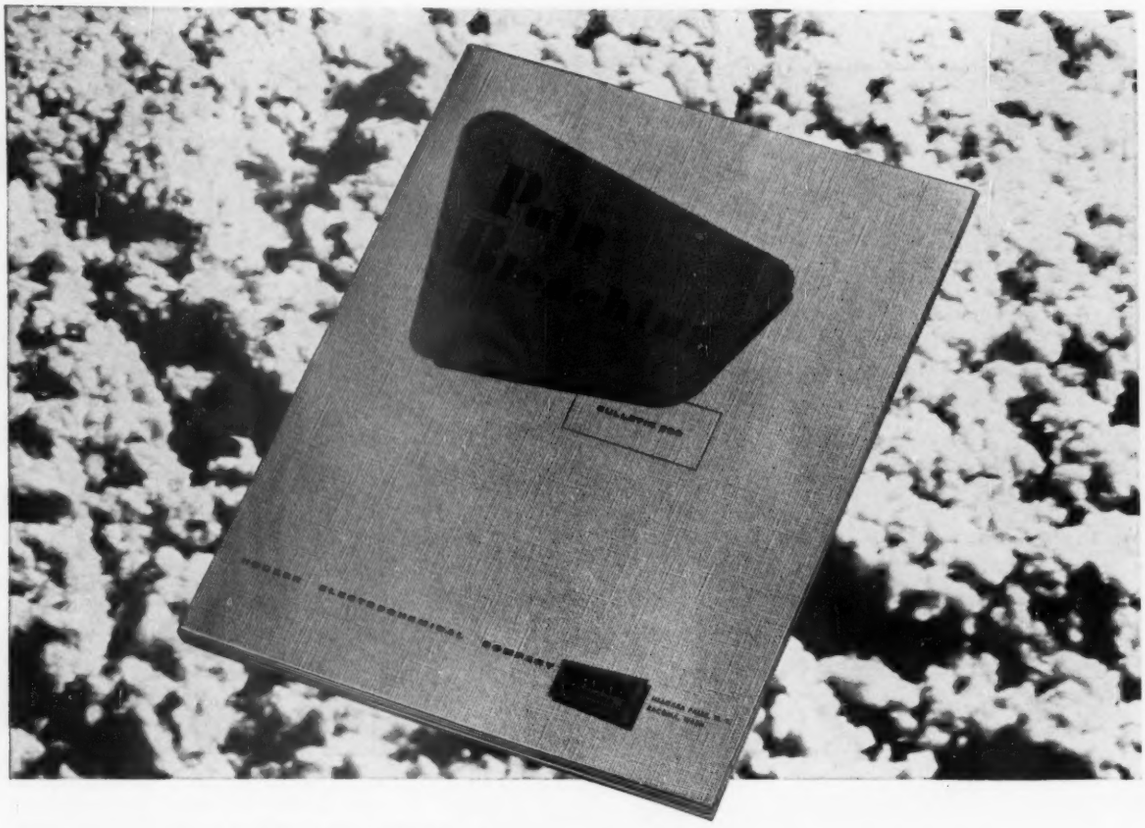


Close-up of 36-2 "Sprout" on-stream at Australian Newsprint

Prior to the installation of the Sprout-Waldron cold caustic process, the furnish for newsprint at this Tasmanian mill was 18% bleached kraft (pine), 82% eucalyptus groundwood. Machine speeds were 1080-1200 ft. per minute. With cold caustic refining, the furnish is 18% bleached kraft, 20% cold caustic and 62% groundwood. Machine speeds have increased by 100 ft. per minute and newsprint strength is equal to the world's best.

For the full story on this and other Sprout-Waldron cold caustic installations, call or write today. Sprout-Waldron experience with cold caustic refining is based on successful installations and actual production. Why not put this experience to work for you without obligation?

PP-105



60 pages of helpful, practical facts you can use for *better bleaching results*

SECTIONS INCLUDE:
(PARTIAL LIST ONLY)

1. Bleaching stages, procedures, and systems
2. Bleaching procedures by types of pulps
3. Hooker chlorination system
4. Hooker chlorine system
5. Sodium hydroxide system
6. Calcium hydroxide system (lime milk)
7. Sodium chlorate system
8. Continuous sodium hypochlorite production
9. Continuous calcium hypochlorite production
10. Chlorine dioxide—methods of production
11. Equipment and materials of construction

For reference in planning a new bleachery—or in getting the most out of your present one—you'll find this 60-page Hooker manual invaluable.

It sums up for you the most significant recent developments in pulp bleaching, as well as older, established bleaching procedures. It is fully referenced to the technical literature, completely indexed, concisely written by John D. Rue and other members of the Hooker technical staff.

Its 52 illustrations include flow charts of the various processes for generating chlorine dioxide; chlorination systems; automatic system for producing calcium hypochlorite; systems and equipment for handling chlorine and caustic soda.

Tables help you estimate installed costs of continuous hypochlorite processes; compare costs of the various chlorine dioxide processes.

For your copy of this useful manual, please drop us a note or simply write "Bulletin 200" and your name on your business letterhead.

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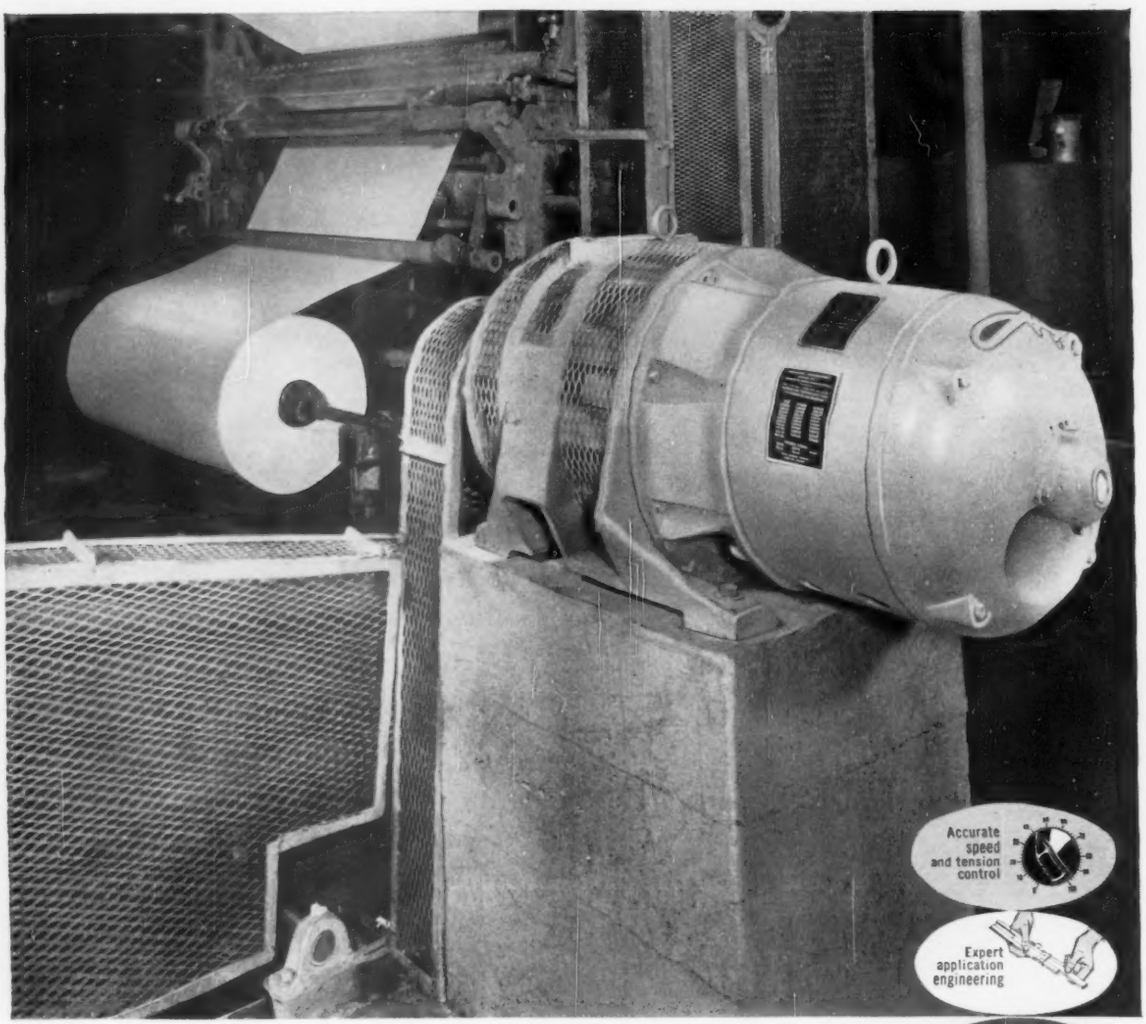

Improve your control of speed or tension– with Louis Allis adjustable speed drives

Every day paper makers and converters are turning to electrical adjustable speed drives for finer, more precise speed or tension control. The widely varied requirements in handling all forms of material from tissue to polyethylene make accurate web control a necessity to keep production high and waste low.

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The Ajusto-Spede® in sizes from 1 to 75 hp, is a maintenance-free, easily controlled A.C. eddy-current clutch drive for operations where simple, accurate control of individual units is desired.

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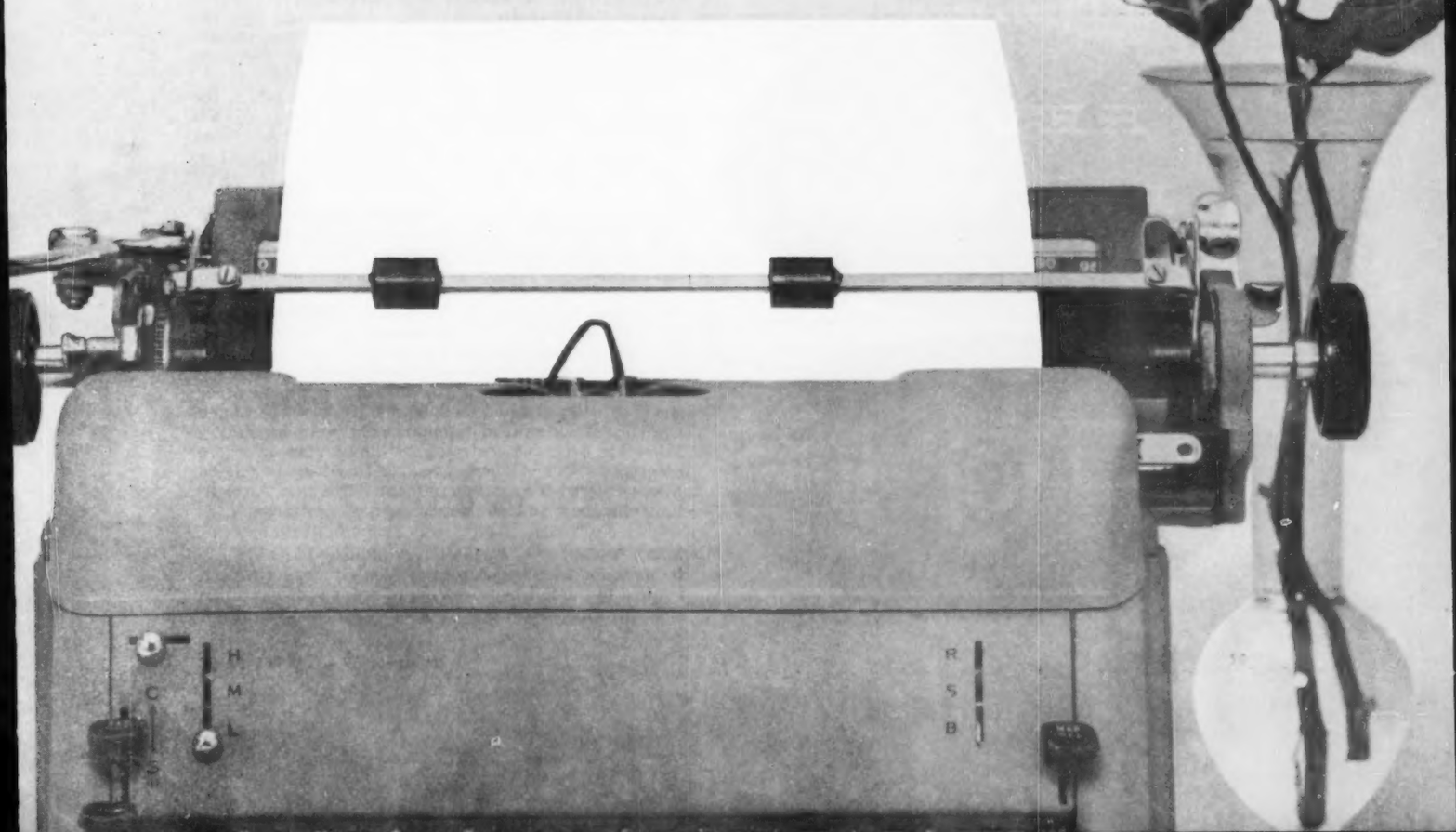

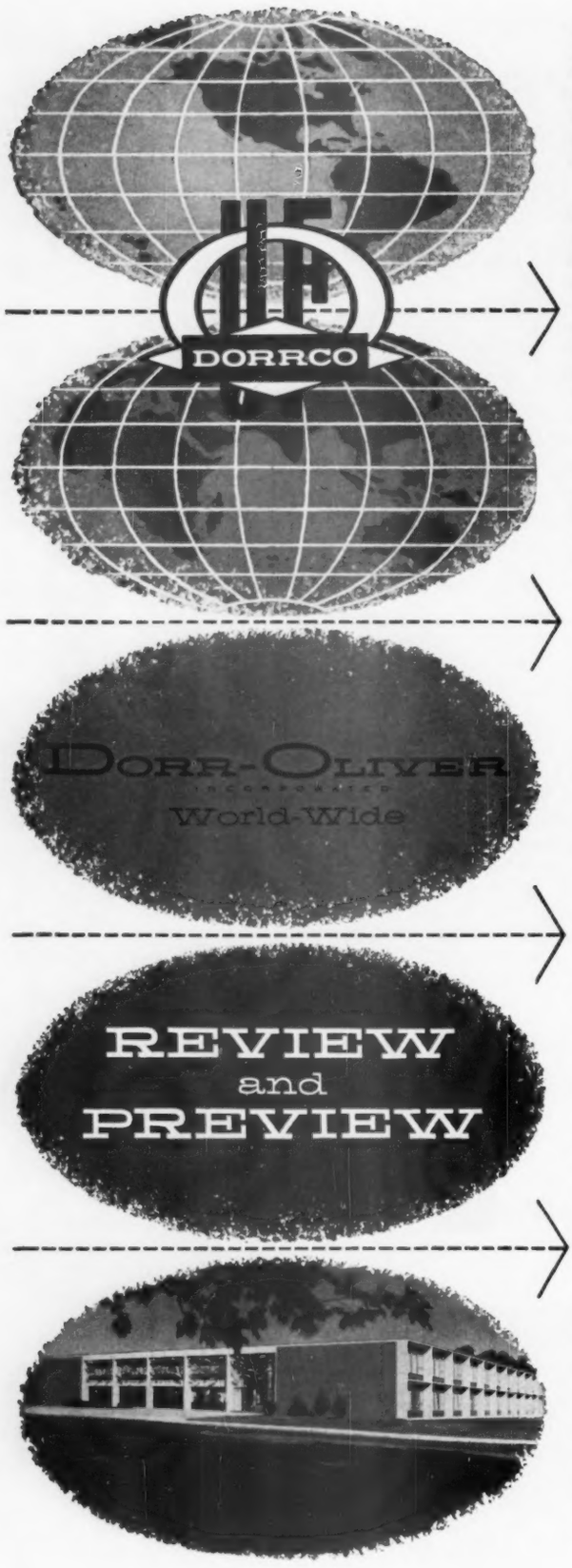

1958 has been a year of healthy consolidation. The generally lower level of new business we have had in common with most capital goods companies has given us a much needed opportunity to examine all our operations with the emphasis on sharpening efficiencies and stepping up the rate of our technological advance. In both, we have made substantial gains.

The sharpening of efficiencies is evidenced by a number of changes. Our manufacturing costs and delivery times are both noticeably better. A reorganization of our Research & Development group has resulted in a greater emphasis on basic research and a speeding up of development of new processes and equipment. This will ultimately include more and better manpower in both these areas. We have simplified routines, eliminated many nonessential operations and projects which seem to creep in during boom times. This allows us to proceed with less staff, but a more able and experienced one.

The current lag in new business has been much less noticeable overseas, and we have been concerned with a number of very large and significant projects abroad. Our subsidiaries have continued to progress and are contributing substantially to the financial balance of our consolidated effort.

PLANT ENGINEERING — The year's major project was the design of a 150 metric ton per day triple superphosphate plant for Mexico. This large contract includes process engineering, plant design, purchase of equipment and supervision of construction of the granular fertilizer plant as well as attendant facilities such as labs, cafeteria, offices and guest house.

A second substantial current project, which is being carried out jointly by D-O and one of our subsidiary companies in Europe, is the design of a large Yugoslavian copper concentrator. Also engineered abroad were a Belgian dicalcium phosphate plant and the expansion of a German phosphoric acid plant. During the year a large fertilizer installation in England went into operation and was rapidly brought up to operating capacity. A fertilizer plant in Montana and a copper concentrator in Israel, both D-O designed, were put into operation late in the year.

Latest addition to the list of installations which the company can now design is the board plant. We are staffed and equipped to engineer any of the basic types including wet or dry process hardboard and particle, insulating, gypsum and flake board.

PULP AND PAPER — A Canadian pulp producer will install a complete D-O Bleach Plant, and Bleach Washers will be utilized in expansion of an Indian groundwood mill. Late in the year Brownstock Washing and Recausticizing Systems, Deckers and hypochlorite preparation equipment were ordered for a new French mill. At a second French mill, a large Brownstock Washing System was put into operation in 1958.

Recausticizing Systems will be installed at two other new mills, one producing paper in India and the other linerboard in the western United States. Continued evidence of widespread acceptance of the American Disc Filter has been demonstrated by the number of orders entered for this efficient saveall. Also of interest were filters ordered for local manufacture from our Australian subsidiary and our Japanese representative.

FOOD PRODUCTS — In the citrus industry, Merco Centrifuges and Mercone Screening Centrifuges have been applied to the finish-processing of orange juice prior to concentration. Successful also has been application of

the Centrifuge-Precoat Filter combination to apple juice processing.

Corn starch washing systems consisting of various combinations of centrifugal equipment were ordered for mills in the United States, Colombia, Holland and Mexico. And, as in so many previous years, the sale of RapiDorr Clarifiers and O-C Filters for cane sugar processing has contributed heavily to orders entered.

FLUOSOLIDS SYSTEMS — Applications of the FluoSolids system were broadened in 1958 to include heat treatment or drying of such materials as foundry sand, phosphate base food products and concentrated detergent and for carbon reactivation. Another new application will be partial roasting of sulfide concentrates at one of Canada's largest smelters.

Other FluoSolids projects now in the design stage or under construction are slag dryers for India and Alabama; pyrite roasters for Spain, South Africa and California; a coal dryer for a midwestern producer and two-stage arseno pyrite roasters for installation in the gold fields of northern Canada. Now in operation or under construction around the free world are over 100 FluoSolids installations on such proven applications as sulfide ore roasting, coal and slag drying, and limestone and phosphate rock calcination.

SANITATION — This phase of our business has been particularly active during 1958 both at home and abroad. Over thirty-five installations of the CompleTreator sewage treatment unit, first introduced last year, are now in operation providing treatment facilities for housing developments, industrial plants, and other small centers of population. Equipment for large domestic projects now under construction include Clariflocculators for a chemical precipitation plant in northern New York State, Densludge Thickeners for the nation's capitol, large Digesters and Distributors for Dallas County, and Clarifiers and Distributors for a Biofiltration plant in Kansas.

Abroad, D-O will supply units for two plants in New Delhi, as well as for installations in Venezuela, Iraq and Kenya. North of the border, extensive additions to the metropolitan Toronto treatment system will be D-O equipped.

Major developments in this field have been the SR Clarifier, a new rapid sludge removal mechanism for final clarification in biological treatment, and the D-O Aerator for the activated sludge process. Installations using both units are already in operation, and a major pulp and paper producer has ordered Aerators for a new waste treatment plant.

COAL — Fine coal recovery and water clarification will be accomplished at Eastern and Australian cleaning plants in large Thickeners ordered within the past year. In a number of instances, an American Filter and ODS Pump will complete the fines recovery circuit.

IRON AND STEEL — Proof of the versatility of the DSM Screen is its application at three points in the heavy media cyclone flowsheet. In its first use on the Iron Range it has considerably reduced magnetite losses. In this general field also the Thickener-Filter combination has continued to be widely applied to recovery of blast furnace flue dust.

CHEMICAL — In 1958 new developments highlighted Dorr-Oliver activity in the far-flung chemical industry. Among the foremost of these was the plastic Filter, a rotary drum vacuum unit constructed of plastic with glass fiber reinforcing. Initial orders indicate the applicability and economy of this unit for mildly corrosive applications.

A second major development, the Merco H-30 Centrifuge, provides the chemical industry with a high capacity, high speed unit capable of clarifying up to 600 gallons of slurry per minute. The product of nearly four years of testing, this machine has substantially reduced operating power requirements per gallon of feed. One of the first commercial applications will be crystal separation at 90° below zero.

Result of yet another new design program is the expanded line of Type L centrifugal pumps. Here, three new designs provide increased capacity and head range and reverse inlet flow for operating speeds of both 1750 and 3500 rpm. In addition, Hypalon elastomer lining is now standard for both Olivite and ODS Pumps.

During the year a German manufacturer ordered the eighth and ninth Horizontal Filters for dewatering artificial resins, and domestic producers purchased Horizontals for such applications as washing ammonium sulfate and nitrocellulose and filtering potash and copperas. Also in the potash field was use of the DSM Screen for debrining crystallizer underflow.

GENERAL METALLURGICAL — Development of an air-lift agitation system for the American Filter has provided a third method of maintaining heavy solids in suspension prior to filtration. Complementing the conventional paddle and swing agitators, this new method has been extensively tested at operating installations.

U. S. and Chilean producers have ordered giant Thickeners with the strongest turntables ever fabricated, and a copper mill in the Belgian Congo will utilize ten large vacuum Filters in a current expansion. New construction at U. S. cement plants includes the three largest Slurry Mixers ever furnished, each 120 feet in diameter, as well as a variety of smaller machines.

WATER — Here also new construction and plant expansions resulted in application of a variety of D-O pretreatment equipment. Two large Hydro-Treator mechanisms will supplement four additional units already in operation at Miami, Florida; and Topeka, Kansas will utilize Presedimentation Clarifiers and Flocculators. PeriFilter systems will be installed at Peoria, Illinois and Leander, Texas; and in Mexico City the first PeriFilter of a new, simplified control design is now going into operation.

Not the least of our gains in efficiency has resulted from new and vastly improved headquarters facilities both here and abroad. Our new International Headquarters was completed here in Stamford in July, the staff of D-O NV expects to move its own new office building in Amsterdam shortly, and our associates in both Brussels and Paris are enjoying new and excellent facilities in co-operatively owned buildings.

In every respect, we are better prepared than ever before to take advantage of the upswing to come and to give better service to our customers throughout the world. This betterment, of course, could only have come about by the diligent and co-operative efforts of our total staff, and to them belongs the credit for the work done.

J. D. Hitch, Jr.
President

November 5, 1958

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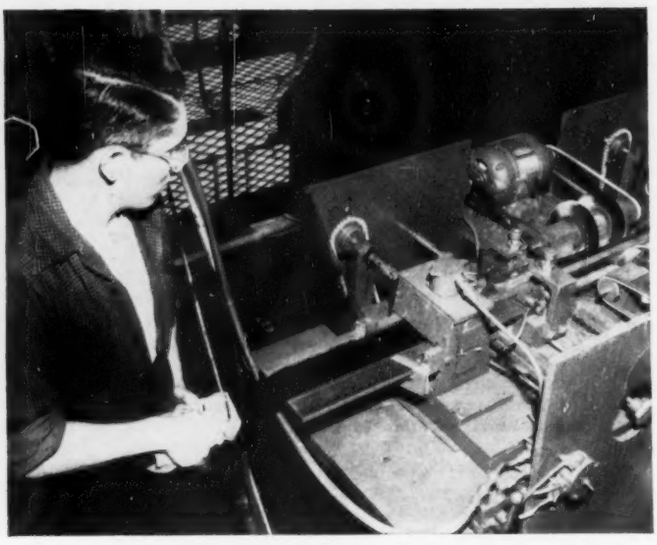
Building the skill of experience into

LODDING DOCTORS...



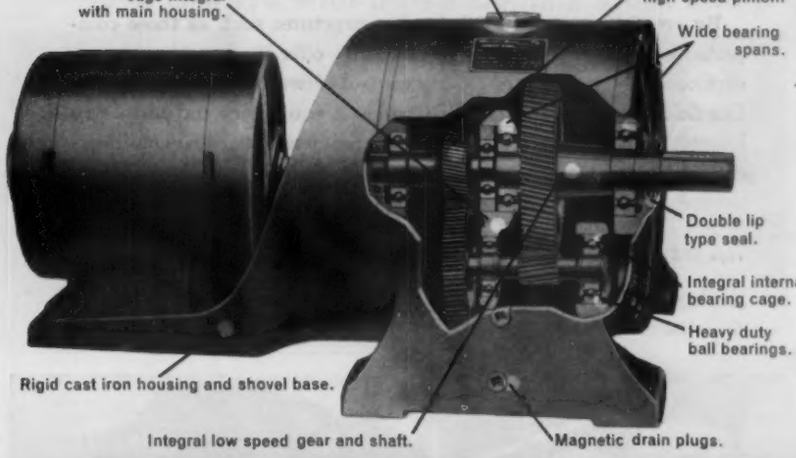
Donald Kennedy has been deburring blades with a Lodding-made machine five years . . . one of the nine operations that goes into the making of precision blades. The deburring machine, designed and made by Lodding, removes burrs after the grinding operation. Removal of these jagged edges prevents scratching roll surfaces.

The high performance which everyone expects and receives from Lodding Doctors is the result of the care and experience of the team producing them. This is an asset which only comes in specializing in doctors over the years.

During the last ten years, Lodding has made more than 10,000 doctors, 17,000 blade holders and 350,000 blades. Lodding shares this experience with you.

LODDING ENGINEERING CORPORATION
AUBURN, MASSACHUSETTS

more user benefits per dollar


Internal bearing cage integral with main housing.
Unique inspection access.
Straddle mounted high speed pinion.
Wide bearing spans.
Double lip type seal.
Integral internal bearing cage.
Heavy duty ball bearings.
Rigid cast iron housing and shovel base.
Integral low speed gear and shaft.
Magnetic drain plugs.

All-motor gearmotor

StraitLine speed reducer

All-motor gearmotor with right-angle head

Integral gearmotor

Vertical gearmotor

with WESTERN GEAR STRAITLINE GEARMOTORS!

For 25 years, Western Gear has designed and manufactured gearmotors for major electric motor manufacturers. During this quarter century, Western Gear has gained matchless experience in the gearmotors field and has learned exactly what gearmotor users want. Feature-for-feature, Western Gear StraitLine Gearmotors, now manufactured and marketed under Western Gear's own name, offer users the greatest list of benefits in the field. If you buy gearmotors, either as a user or an OEM supplier, the full story of the benefits for you in Western Gear StraitLine Gearmotors is required reading and listening. Get the story from your nearby Western Gear man or distributor. And for a starter, use the coupon in this ad to get our basic bulletin No. 5806-F.

WG INDUSTRIAL PRODUCTS DIVISION

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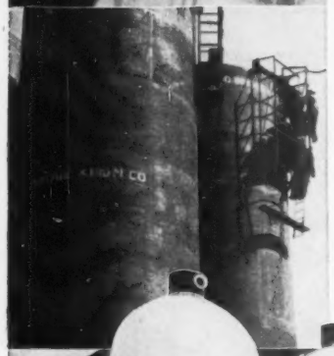


At Weyerhaeuser's new sulphite mill:

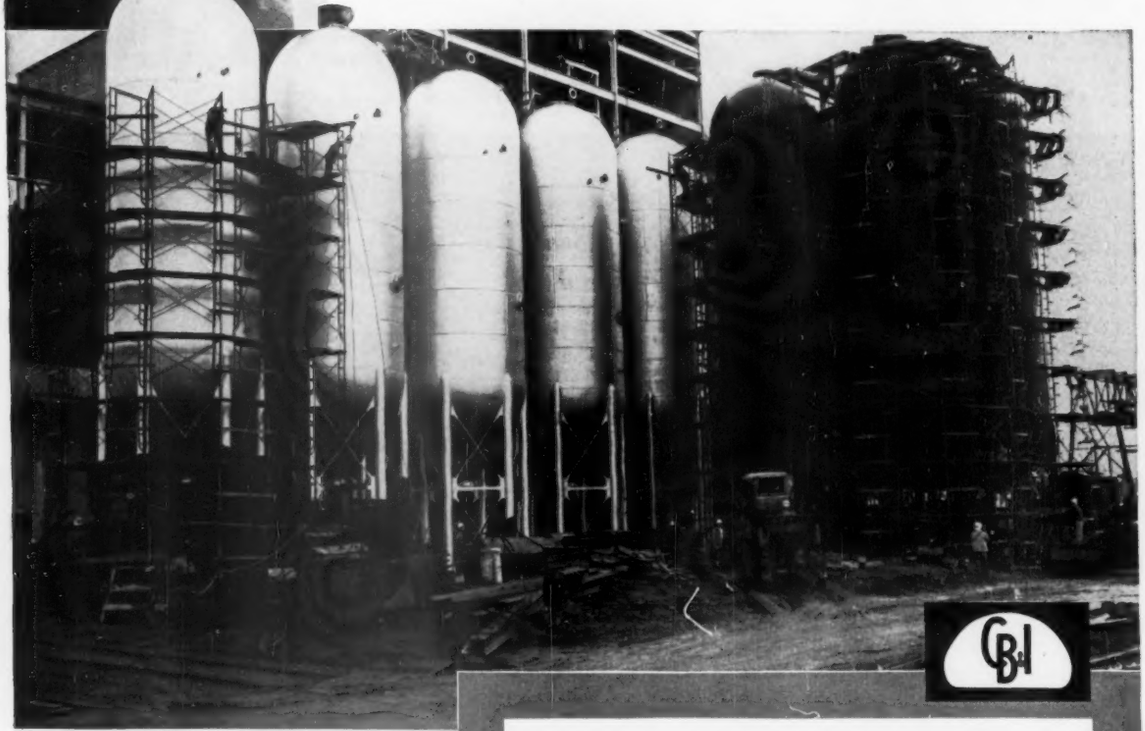
CB&I-built Digesters and Accumulators are field erected and stress relieved

CB&I Field Services *went to work* at Weyerhaeuser's new 400-ton sulphite pulp mill—recently completed at Cosmopolis, Washington. The 7 CB&I digesters and 4 accumulators were stress relieved in the field. All welds were similarly checked by specially designed, non-destructive X-ray examination equipment.

By erecting as well as fabricating structures such as those completed at Weyerhaeuser, CB&I is able to offer its customers an exceptionally high degree of quality control between the shop and field. Our field service program offers experience, equipment and on-the-job know-how to handle your most specific requirements. Write our nearest office for the new bulletin on *Field Erection Services.*

Top: CB&I specialist uses portable X-ray machine for examination of seam welds.

Left: Automatic (patented) girth welder being adjusted for welding circumferential joints on accumulator.



Left: 60-foot high digesters are 17 feet in diameter.

Right: Four accumulators have 1,290 cubic foot capacity each.

Chicago Bridge & Iron Company

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PP22

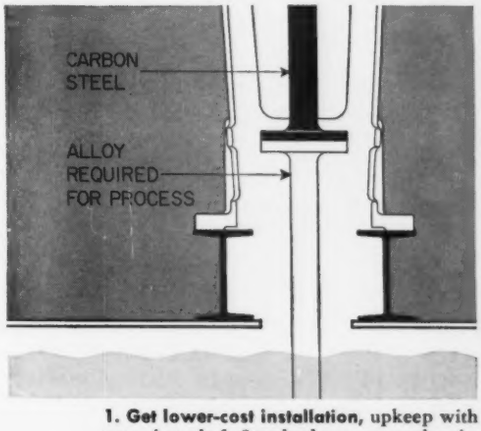
If you want to cut fluid mixing costs
look inside the tank

You can make some of your biggest cost reductions *inside* the tank, when you select a mechanical mixer for fluids.

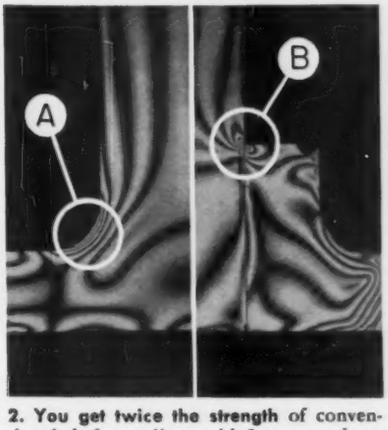
These are *long-term* savings—based on low-cost maintenance, trouble-free service, adaptability to changes in your process, minimum spare-part requirements.

These are the areas where you can *really* save money on fluid mixing. And here are some in-the-tank reasons why you can do it better with LIGHTNIN Mixers than with any other make. For lowest-cost fluid mixing, see your LIGHTNIN representative soon. He's listed in Thomas' Register. Or write us direct.

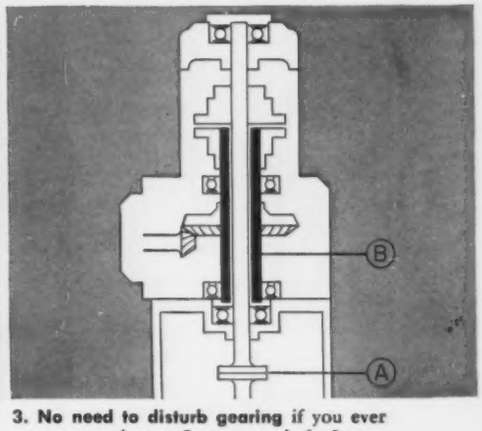
Save 6 ways with these *Lightnin* shaft and impeller refinements



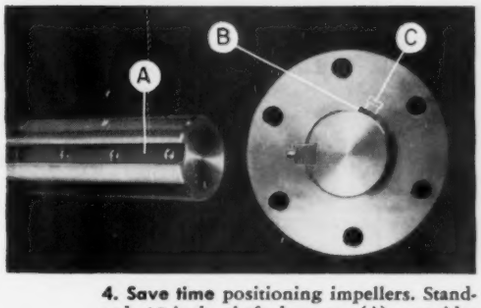
1. Get lower-cost installation, upkeep with two-piece shaft. Standard on open-tank units (available with closed-tank units, too), lower section is alloy required for process; upper section can be inexpensive carbon steel. Rigid coupling has rabbeted joint assuring accurate alignment.



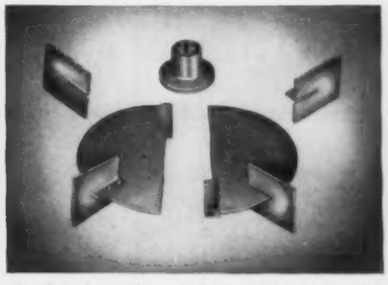
2. You get twice the strength of conventional shaft couplings with LIGHTNIN deep-welded coupling (A). Not one of these couplings has ever failed in service. Polarized light shows how machined and polished radius eliminates stress concentration found in conventional coupling (B).



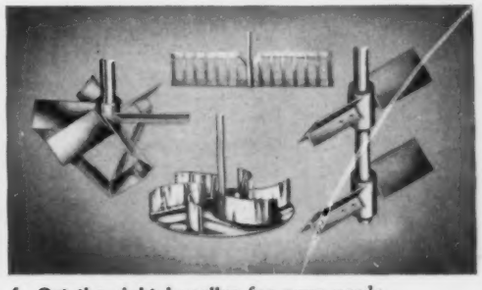
3. No need to disturb gearing if you ever want to replace a LIGHTNIN shaft. Lower shaft is unbolted at (A). Upper shaft slides out of hollow reducer quill* (B). Gears remain untouched—cannot get out of line. When new shaft is installed, shaft alignment is automatic. *Patented



4. Save time positioning impellers. Standard 18-inch shaft keyway (A) provides seven positions (more if you want)—saves you cost of special machining. Also note shallow extra keyway (B) for impeller hub setscrew (C). It permits impeller to slide freely, even if shaft is burred.



5. Cut impeller replacement cost with LIGHTNIN all-bolted design. Replace blades without buying a whole new impeller. Blades come off to pass small openings; or impeller can be supplied split, as shown. Same disc takes 4, 5, 6, or 8 blades for easy change in power input.



6. Get the right impeller for your needs. You can handle practically any fluid mixing requirement with a standard LIGHTNIN impeller. But for special jobs, you can get LIGHTNIN impellers made to specification in all machinable materials and with widest choice of coverings.

WHAT MIXING OPERATIONS ARE IMPORTANT TO YOU? You'll find a wealth of information on fluid mixing in these helpful bulletins describing LIGHTNIN Mixers:

- ☐ Top or bottom entering; turbine, paddle, and propeller types: 1 to 500 HP (B-102)
- ☐ Top entering; propeller types: ¼ to 3 HP (B-103)
- ☐ Portable: ⅛ to 3 HP (B-108)
- ☐ Confidential data sheet for figuring your mixer requirements (B-107)
- ☐ Side entering: 1 to 25 HP (B-104)
- ☐ Laboratory and small-batch production types (B-112)
- ☐ Condensed catalog showing all types (B-109)
- ☐ Quick-change rotary mechanical seals for pressure and vacuum mixing (B-111)

Check, clip and mail with your name, title, company address to:

MIXING EQUIPMENT Co., Inc., 141-a Mt. Read Blvd., Rochester 3, N.Y.

In Canada: Greey Mixing Equipment, Ltd., 100 Miranda Ave., Toronto 19, Ont.

***Lightnin*® Mixers**

MIXCO fluid mixing specialists

The C-E Chemical Recovery Unit 1954 through 1958

During the five year period beginning January 1, 1954, 37 C-E Recovery Units—ranging in size from 80 tons to 667 tons—have been purchased by the pulp and paper industry. They average 1,100,000 lbs of dry solids per 24 hours and represent a daily pulping capacity of about 13,700 tons.

Name	No. Units	Des. Press.	Steam Temp. °F.	Pounds Dry Solids per 24 Hours
B. C. Forest Products, Ltd.	1	700	550	1,600,000
Canadian Forest Products, Ltd.	1	450	750	500,000
Canadian International Paper Co.	1	300	500	900,000
Chesapeake Corp.*	1	1400	600	1,250,000
Continental Can Co.*	1	975	640	1,120,000
Crossett Paper Mills*	1	1000	700	1,500,000
Dierks Paper Co.	1	675	750	495,000
East Texas Pulp & Paper Co.*	1	700	750	1,600,000
Enso Gutzeit Oy.*	1	1075	900	1,500,000
Enso Gutzeit Oy.*	1	1075	840	1,500,000
Enso Gutzeit Oy.*	1	1400	900	1,500,000
Georgia-Pacific Paper Co.	1	700	750	1,050,000
Halifax Paper Company, Inc.*	1	1000	825	1,500,000
International Paper Co.*	1	1000	825	1,500,000
K. V. P. Co., Ltd.*	1	725	450	1,100,000
Longview Fibre Co.*	1	950	750	2,000,000
MacMillan & Bloedel, Ltd.*	1	690	730	1,020,000
Mead Corp.*	1	1025	850	1,100,000
Nekoosa Edwards Paper Co.*	1	500	700	1,050,000
North Carolina Pulp Company*	1	725	750	1,200,000
Northwestern Pulp & Power, Ltd.	1	700	750	1,400,000
Oxford Paper Co.*	1	800	725	900,000
Rauma-Repola Oy.*	1	1400	900	1,210,000
Rayonier, Inc.*	1	700	760	1,400,000
Riegel Paper Co.*	1	700	725	1,050,000
St. Lawrence Corp., Ltd.	1	700	750	1,060,000
St. Mary's Kraft Corp.*	1	700	725	825,000
St. Regis Paper Co.*	2	700	750	1,150,000
Southland Paper Mills, Inc.*	1	700	750	525,000
Taiwan Pulp & Paper Co.	1	500	825	286,000
Tecnica Cubana, S.A.	1	500	750	240,000
Thurso Pulp & Paper Co.	1	525	710	675,000
Union Bag-Camp Paper Corp.*	1	500	750	1,610,000
Union Bag-Camp Paper Corp.*	1	500	750	1,610,000
United Paper Mills, Ltd.*	1	1075	900	990,000
Weyerhaeuser Timber Co.*	1	700	750	1,050,000

* Companies which have purchased C-E Recovery Units in addition to those listed here. There are twenty-three such companies on this list. One organization has ordered six C-E units.

COMBUSTION ENGINEERING

Combustion Engineering Building
200 Madison Avenue, New York 16, N. Y.

C-163A

ALL TYPES OF STEAM GENERATING, FUEL BURNING AND RELATED EQUIPMENT; NUCLEAR REACTORS; PAPER MILL EQUIPMENT; PULVERIZERS; FLASH DRYING EQUIPMENT; PRESSURE VESSELS; SOIL PIPE

Exclusive 4-In-1 "concrete-bucking" pry-over-shoe break-out action—breaks up, digs up, and loads out old pavement—gives big advantages over "single-action" rigs! The new TD-15 4-In-1 exerts the tremendous break-out force of 42,650 lbs! You also get 'dozer, "carry-type scraper," and multi-purpose clam-shell actions in all International Drott 4-In-1's!

NEW International® Drott TD-15 Four-in-One

capacity . . . to outload 100 hp "single-action" rigs plus versatility unlimited . . . of exclusive clam-action

Sized, powered, geared, and **controlled** to decisively outproduce any "single-action" loader in the 100-hp field—the new 2¼ cu yd TD-15 4-In-1 gives you exclusive International Drott clamshell action!

Here's new big-job-sized versatility unlimited! Simply move the selector lever with fingertip ease—to get any one of four big-capacity machine actions needed. On big job after big job, the TD-15 4-In-1 can replace costly big-capacity limited-action machines one after another!

And whether this 4-In-1 replaces four or forty machine actions for you, you get it for one moderate price!

Smooth, years-proved, 115 hp 6-cylinder International diesel engine in the new TD-15 4-In-1 gives you full advantage of increased hydraulic system capacity—of new 6-speed, full-reverse transmission mobility – of new cycle-speeding forward-reverse Shuttle-Bar control!

Correct balance and long-track stability eliminate the need for counter-weighting the TD-15 4-In-1. Track length on the ground is a full 98⅜ inches!

Compare TD-15 4-In-1 capacity on road work . . . try TD-15 Skid-Grapple on pulp-loading!

There's only one way to size-up new TD-15 4-In-1 and Skid-Grapple performance—to measure job range and capacity—to compare money-making capabilities to a yard-full of special-purpose rigs. Get on the deep-cushioned seat and prove to yourself what it can do—with bucket, building roads, clearing land, producing materials; with Skid-Grapple, loading pulpwood or saw-logs, wholesale! See your International Drott Distributor for a demonstration!

International Harvester Company, Chicago 1, Illinois
Drott Manufacturing Corp., Milwaukee 15, Wisconsin

INTERNATIONAL® DROTT

SAW MILL OPERATOR SAYS:

"THERE'S NO END TO THE JOBS FORD CAN DO...FASTER, TOO!"

Paul Sparks, operator of a saw mill which produces headers, wedges and other supplies for coal mines near Summersville, W. Va., had been depending on hand labor until last year when he bought a Ford Tractor and Industrial Loader.

"Ford's the busiest worker we've got," he says, "And anybody on the job can operate it. My 15-year-old son usually runs the rig, and in two hours he does more work than four men used to do all day.

"Clean-up jobs, ditching, building roads, snaking logs to the skidway, rolling them up with the bucket—there's just no end to the work we put it through, and I've never found a job yet that it couldn't do."

Ford Tractors and equipment can save man hours and job dollars in *your* work, too. Get details from your nearby dealer, or write to: Tractor and Implement Division, Ford Motor Company, Birmingham, Michigan.

YOU SEE MORE FORDS BECAUSE THEY SAVE MORE MONEY!

Keep yourself in the money-making picture with the HOMELITE 7 21

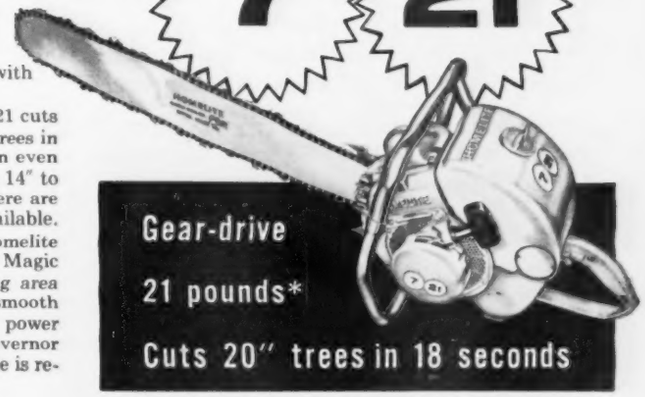
7-Month Guarantee

Put yourself and *keep* yourself in the money-making picture with the Homelite 7-21 gear-drive chain saw.

You put yourself in the money-making picture because the 7-21 cuts so fast so well. It fells trees up to 7 feet in diameter, cuts 20" trees in 18 seconds. It weighs only 21 pounds* and is easy to handle in even the roughest terrain. You have a choice of straight blades from 14" to 60" to match any cutting job. And for special cutting jobs, there are clearing bar, brush cutter, and 14" and 18" plunge-cut bows available.

You keep yourself in the money-making picture because the Homelite 7-21 stands up under day-in-day-out cutting. With the Homelite Magic 7 features . . . (1) new cylinder design has 12% more cooling area (2) tough, drop-forged, counter-balanced crankshaft gives smooth performance (3) revolutionary intake valve increases engine power (4) finger-tip plunger pumps oil directly to chain (5) automatic governor cuts engine wear (6) automatic clutch stops chain when throttle is released (7) large air filter keeps out sawdust, dirt, snow.

And the Homelite 7-21 is guaranteed for 7 months!



Have a free demonstration at your nearest Homelite dealer.

*less bar and chain

Find Your Homelite Dealer In The 'Yellow Pages'

Manufacturers of carryable pumps, generators, chain saws, blowers

HOMELITE
A DIVISION OF TEXTRON INC.
7701 RIVERDALE AVENUE, PORT CHESTER, NEW YORK

How Southwestern uses

20 Cat Diesel Tractors for low-cost planting!

Several years ago the Southwestern Settlement & Development Co. embarked on an intensive forest site preparation project on its 650,000-acre holdings near Jasper, Texas. From seedlings through planting to harvesting, this division of the East Texas Pulp & Paper Company controls the operation. Twenty Cat Diesel Tractors spearhead the planting part of the project. In a recent year, these machines planted 20,000,000 pine seedlings on 24,000 acres in about 4 months.

For planting areas like the one shown here, Southwestern used 4 Cat D4 Tractors with V-plows and Lowther Wildland planters. In spite of heavy going in uncleared woods, each D4 planted an average of 9 acres per 8-hour day. With 6′ x 8′ spacing, this totaled 908 seedlings an acre. To plant cleared areas, the company used 16 D2s with single or double standard planters.

Low-cost production, of course, depends on many factors. One of the most important is high machine availability. On this score, the ruggedness of Caterpillar track-type Tractors has been *proved* on job after job in all types of woods operations. Equally important to availability is a reliable source of prompt service. You can depend on that 24 hours a day from your Caterpillar Dealer. You can also depend on him for practical information about Caterpillar-built machines on forest site preparation. Call him today!

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.

Forest site preparation methods and machines available in cost studies!

Growing a profitable pulpwood crop at the lowest possible cost calls for methods and machines best suited to each phase of the operation. Complete cost studies, compiled on actual jobs, are available on the following subjects: Stump Treatment; Stump Clearing and Tree Cutting; Chaining; Raking and Windrowing; Harrowing; Planting. For information, write Logging Section, Caterpillar Tractor Co., or call your Caterpillar Dealer.

CATERPILLAR

Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

HEAVY-DUTY WOODS EQUIPMENT FOR THE HARD WORK

PORT ANGELES FIREBOARD PLANT'S WOOD SUPPLY SECTION with new wood mill surrounded by an acre of stored chips (rear) and 1,100 cord log storage area. Log being placed on feed-storage deck by Pettibone Cary-Life (foreground) will be barked and converted to chips in open-construction mill for direct delivery to digesters via conveyor pipe leading out of photo at left or diverted to storage via pipes over chip pile.

New Wood Sources—New System

Efficiently supply Fibreboard's Port Angeles, Wash., mill, which is now using additional forest species as well as waste chips

• Prior to 1956, the Port Angeles, Wash., pulp and board mill of Fibreboard Paper Products Corp. did all its own logging. The logs were debarked and prepared for pulping by outside sources. The clean, bark-free wood was placed in racks and transported to the Fibreboard plant by straddle trucks for grinding or chipping.

Company logging and off-premises barking, bucking and splitting was systematically reduced following institution of a program to purchase waste-wood chips from nearby sawmills and plywood plants approximately four years ago.

Plans for the new wood mill at the Port Angeles plant were based on a recognition of two factors: (1) that waste-wood chips purchased from neighboring sawmills and plywood plants will continue to be a raw material source of major significance and (2) that certain wood species, seldom utilized by other forest products industries, can be economically processed from log form at Port Angeles pulp and board mill with a modern chipping and barking facility located at the plant site.

The original waste wood utilized for pulp at the mill consisted of chips made from veneer (trims, edgings, fishtails) at neighboring plywood plants. Subsequently the waste acquisition program grew extensively, both in area of contributing source and volume.

To facilitate handling pre-screened purchased chips arriving at the plant in growing volume, an outside walled and partitioned hardsurfaced chip storage area was prepared. The approximately one-acre storage area is equipped with facilities for transporting arriving chips to storage and for controlled delivery from there to the digester building.

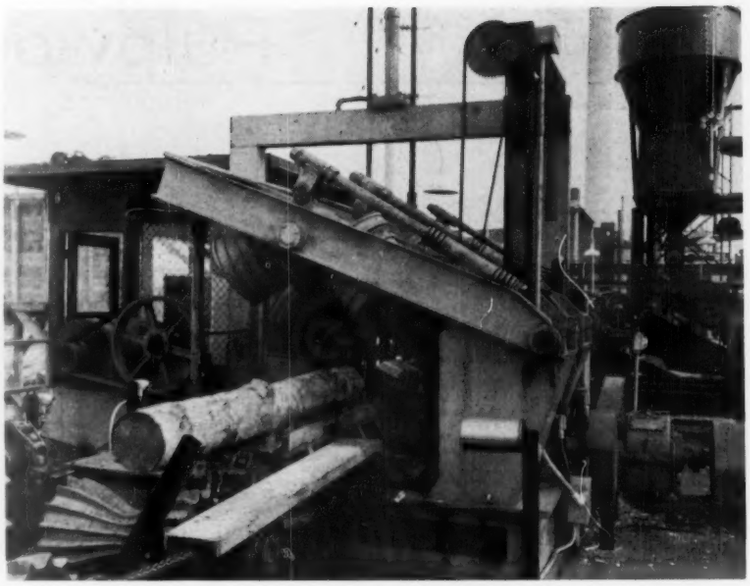
Red Alder Now Used

One of the effects of modernizing

the pulping processes at Port Angeles was an extension of the scope of usable wood species. Western red alder, a readily available but little-used species common to the Olympic Peninsula and other low-elevation, high-precipitation areas, consequently became significant. Since alder is but little used by other forest products industries, availability of the wood is limited to log form. The need for facilities to prepare alder logs for pulping was influential in planning the recent installation of the modern wood mill at the Fibreboard plant.

This new facility, located between log and chip storage areas and adjacent to both, provides complete facilities for converting logs into clean, bark-free chips and delivering them to storage and to the mill. By a combination of remote controls and automatic processing, the entire wood mill operation (excluding log delivery) is carried out by a two-man crew.

The new wood processing unit was a project of Fibreboard's Central Engineering at Lafayette, Calif.; Owens Brothers was the prime contractor.



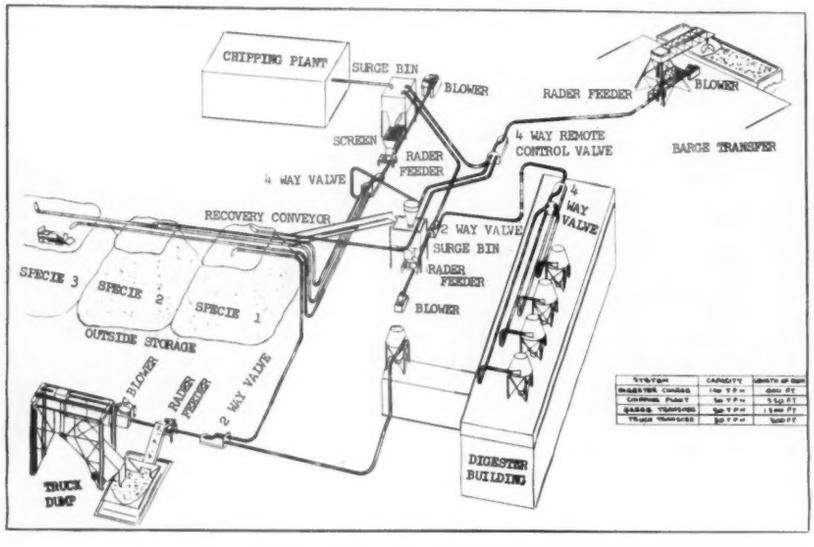
FEEDCHAIN TAKING ALDER LOG into Nicholson 30-in. Roto-Barker which automatically "opens" and adjusts to size as previous log emerges opposite outfeed side.

Processing for Logs

Logs arriving by truck from local woodlots in 8-ft. length are unloaded by a mobile one-cord capacity Pettibone-Mulliken Cary-Lift and placed in decks for yard storage or set directly on the chaintopped mill deck for processing. This live-storage unit, consisting of three tandem sections to facilitate log segregation and even flow, delivers logs to a Nicholson 30-in. Roto-Barker through use of either manual or automatic controls.

As a log leaves the barker, the feed rolls follow it with another. At the same time a control-power combination, working in conjunction with Vickers hydraulics and compressed air provided by a Gardner-Denver compressor, automatically readies the barker for processing that particular log. Rapid adjustments include lining up the barking ring with the log, setting the ring to correct log size and adjusting rate of forward travel in accordance with speed of bark removal.

Normal production flow is from barker directly to in-feed spout of an 84-in. 6-knife Sumner Ironworks chipper at back end of the wood mill. Exceptions are made for wood larger than 15-in. diameter and for wood to be converted into groundwood instead of chips. These pieces are diverted from the main conveyor, immediately behind the barker, to a reversible chain transfer conveyor. Facilities it serves include a 72-in. cylinder-activated James Brinkley Co. cut-off saw, a reversible transfer leading to a Sumner steam splitter, a 4-saw Monarch Forge & Machine slasher, connecting with a conveyor, taking blocks directly to the grinder room. Wood from the splitter goes either to the chipper conveyor or to the block conveyor.



UNIVERSAL CHIP TRANSPORT is provided by high-pressure Rader Pneumatics conveyors for wood mill, storage, truck-dump hopper and pulp mill. Four 8-in. lines (bottom right) lead from RP 4-way air switch to three storage compartments and surge tank (top left) with Link-Belt rotary feeder at bottom through which chips enter curved 12-in. line at left delivering directly to digester cyclones. Sutorbilt air pump (right rear) provides air stream for final chip delivery.

A ramp at the side of the wood mill enables a Cary-Lift to deliver bark-free wood to the main transfer or to remove barked wood from it for placing in yard storage, which has capacity for 1,100 cords. Bark and other refuse from the wood mill are converted into hog fuel by a Montgomery (Jacksonville Blow Pipe Co.) 18-in. Blo-Hog.

The fan-blade equipped chipper discharges chips vertically through a pipe to a cyclone from which they emerge through a Sumner star feeder to a 4 by 10 ft. vibratory screen.

MICHIGAN-CLARK LOADER TENDS STORAGE PILE by spreading incoming chips and keeping recovery belt supplied.

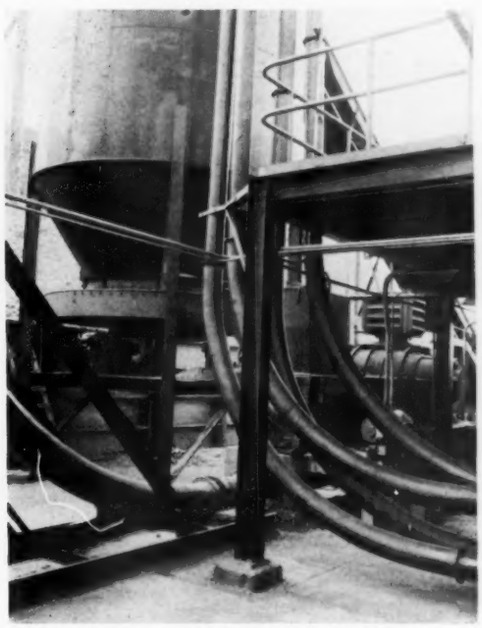
Chip System is Selective

The resultant screened chips enter a Rader Pneumatics high-pressure system for selective delivery to any of several points. In addition to handling the wood mill production, the system unloads purchased chips arriving by barge and truck, takes chips from either source (segregated by species) to any of three storage compartments, and delivers chips directly to the digestor building.

The chip transport system, equipped with Rader star feeders, uses a large Sutorbilt air pump (powered by 200 hp Westinghouse motor) to provide pressurized air stream for "floating" chips through the conveyor pipes at rapid rate.

The final transport delivers chips directly to any of four cyclones in the digester building through a 12-in. diameter pipe extending 500 ft. horizontally and 60-ft. vertically. Each cyclone sets directly over a digester which receives its chip charge directly from the cylone by gravity flow. The quantity of each charge and rate of chip flow to cyclone and digester are controlled by means of a Link-Belt revolving plate feeder at bottom of a steel surge bin from which the final conveyor receives the chips.

This unusual combination system performing the dual job of transporting chips to the digester building and loading them directly into digesters is lauded by both management and crew.



VERSATILE CHIP HANDLING at Port Angeles plant (Fibreboard) is provided by interconnecting Rader Pneumatics pressure systems. Barged, trucked and wood mill produced chips go directly to cyclones for gravity flow to digesters or to digester building via outside storage.

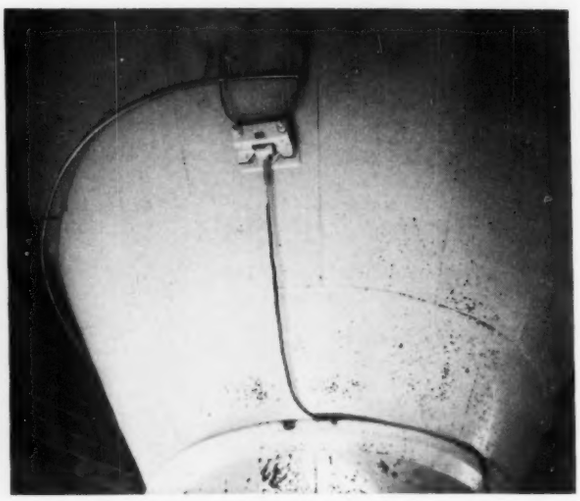
Loader Operates on Chip Pile

A Michigan-Clark rubber-tired loader, equipped with 2 cu. yd. bucket —generally used as a bulldozer—operates on the stored-chip piles. It serves two prime functions: spreading out the air-blown chips to make use of the entire storage area and assisting in removing chips from storage by keeping transport belts loaded.

This conveyor system consists of three U.S. Rubber conveyors, two located beneath the piles to deliver chips to the main belt paralleling the storage area. Chips arriving on this belt are delivered to a Link-Belt conveyor connecting with the universal Rader Pneumatics system.

A barge unloading system installed this spring handles purchased chips shipped to Port Angeles by water. The chips are removed from the barges by a clamshell, dropped into a surge bin that meters the chips into a Rader feeder. The 12 in. pipe line crosses open water on pilings and travels 1200 ft. to the wood mill area, where a Rader automatic valve remotely operated from the barge berth diverts chips to either the digester charging bin, the surge bin over the screen, or to open storage.

AT 7 FT. PER SECOND, 1100-ft. flume carries logs to split chute which delivers to either of two FMP barkers. Stebbins chip silos (at right) are served by Transite-enclosed Jeffrey conveyors; in front of silos, Jeffrey traveling screens clean flume water.



SMACKING SIDE OF STEEL HOPPER at bottom of each of twelve Stebbins tile chip silos is this Syntron vibrator. Its action against hopper side prevents chips from arching and clogging silos. The Semtile silos are 90 ft. high and 30 ft. in diameter.

$12 Million A Year For Wood

Rayonier improves Jesup woodyard. Its own 600,000 acres, plus local markets, keep 20,000 cords a week coming

● Rayonier Inc.'s Jesup, Ga., doubled in size (see story in forepart of this issue) demands fresh wood. It rarely uses sticks over 30 days old, doesn't even use concentration yards. And although it uses some 500,000 cords of wood a year, its woodyard is designed to store only about 20,000 cords—proof that wood doesn't stay around long after it arrives.

Before the new mill, Rayonier spent $6.4 million for wood at Jesup. Now, with the new mill on the line, the figure will be roughly twice that. Most wood comes by truck from within a 60 mile radius. Rail wood is mostly from its own holdings—600,000 acres in all, 225,000 in Georgia, the rest in northern Florida. (See "Helping the Land Grow Pine Trees," PULP & PAPER, Feb. 1958, page 122.)

Truck wood is scaled by weight, the trucks being weighed as they arrive at the mill and on the way out after leaving their load. One operator runs the scales from inside a brick receiving station and a second inspects the loads for rejects as the truck is weighed. The entire procedure takes only a few seconds.

Simple, Straight Line Operation

The yard itself is simplicity personified. A new 1,100 ft. long high-velocity flume runs parallel to the existing flume and is serviced by two rail spurs laid close along its side. An American Hoist diesel electric railroad crane, employing either grapples or a sling, is used primarily for unloading truck wood and stacking pulpwood in the yard. A Link-Belt Speeder equipped with a dragpan unloads rail-cars and trucks into the flume.

Flume water is circulated by a 16,000 gpm Ingersoll Rand pump at 7 ft./sec. to prevent logs from sinking. Flume water is cleaned through a Jeffrey traveling screen which Rayonier helped design. Dempster Dumpsters haul sand and trash away.

From the flume, Jeffrey conveyors carry logs on a single strand line to a split discharge where they can be delivered to either of two 12 ft. by 67 1/2 ft. Fibre Making Processes barking drums, side by side. The new

line discharges to a Jeffrey sorting deck with a Goodrich longlife rayon cord conveyor 120 ft. long. Oversize or unbarked logs are pulled off and either run through a D. J. Murray splitter or recirculated through barkers. Safety engineers will be particularly interested in the precautions taken here: All sorters wear hockey-type shin guards in order to prevent accidents.

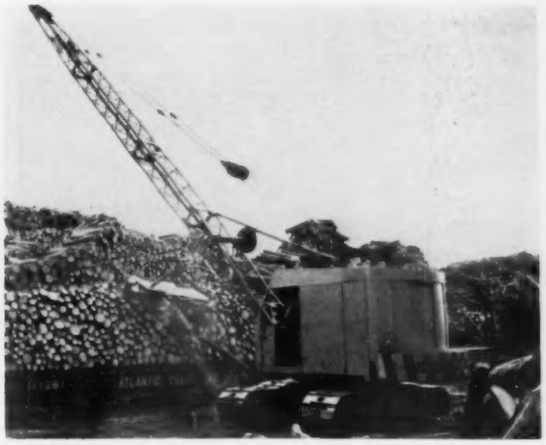
Chipping Room Identical

The chipping and screening room is similar to the original mill. However, the two "A" D. J. Murray 10-knife 110-in. chippers have sufficient capacity to provide chips for both mills. Chips are screened over Orville Simpson Rotex screens. Bark is processed through two Sumner hogs before being conveyed to the boilers.

Chips are stored in twelve 90 ft. by 30 ft. Stebbins Semtile chip silos, six new. Syntron vibrators prevent chip arching. A new conveyor feed system can supply chips from the new silos to either the new or old digester line.

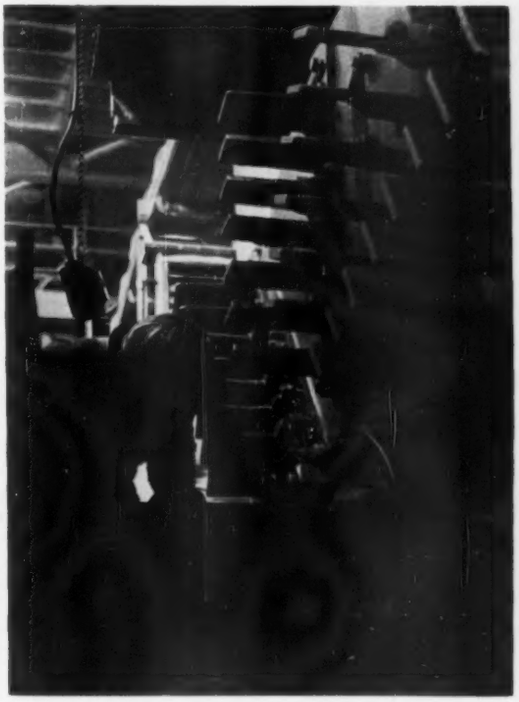
From silos, chips are transported on Jeffrey conveyors to the digester house. Conveyors are totally enclosed with Transite hoods to prevent dirt from contaminating chips.

CHECKING WEIGHT of pulpwood truck, scaler makes out trip card as loaded trucks enter mill. Truck is weighed again when it leaves to determine weight of wood.



LOGS TUMBLE INTO FLUME alongside flat cars as Link-Belt Speeder crane with a special plate drag empties them on siding.

RAILCRANE UNLOADS WOOD from trucks. This is American Hoist and Derrick unit.



INSIDE VIEW OF MURRAY CHIPPER shows back off, as workers clean plates.

MEAD RECOMMENDS SCALE AND SCALE OFFICE CLOSE TO WEIGHING PLATFORM. A dual face scale is used to enable the driver to see what his wood weighs, too. All he has to do is look through the window, as this one is doing at Chillicothe, O., mill. At Mead's Harriman, Tenn., and Sylva, N. C., mills, bay windows are used. Buying wood by the pound might have its disadvantages unless . . .

A COORDINATING FEATURE—FAST UNLOADING—IS PROVIDED. Mead solved this problem at several mills by using this modified split sling, made by Taylor Machine Works, Louisville, Miss. With this sling, an 8 to 10 ton load of wood is unloaded and the empty truck is back at weighing platform in 3 or 4 minutes. The truck is weighed again . . . the difference in weight being weight of wood.

Buying Pulpwood by Pound

saves labor and provides both seller and purchaser with many benefits. At Mead mills, they both like the system.

By ROBERT C. BARIENBROCK
Director of Wood Procurement, The Mead Corp.

(Presented at American Pulpwood Assn. meeting, Duluth, Minn.)

● Many commodities are sold and purchased on a pound basis—foodstuffs, tobacco, cotton, minerals and, here in the Lake States, chemical wood. The fact that pulpwood yields are almost directly proportionate to the weight of the wood used should in itself have directed us to weight scaling years ago.

Volumetric studies of solid content per cord, along with a closer look at weight variations within a species, led us at Mead to appraise the benefits of purchase by weight. There were, of course, many other factors which made it feasible to recognize this method of purchase as practical.

We had changed species use at many mills, our purchase program had gone from heavy rail shipment to volume truck delivery, mechanical handling had stepped up the space required of the scaling operation and sap-peeled wood had been reduced to a minor percentage of our total consumption.

We at Mead were not the first to go to weight purchase and therefore had the benefit of several of our friends' experience. The method used at Westvaco, in Covington, Va.; Champion Paper, at Canton, N. C.; and our own affiliate mill, Brunswick Pulp in Brunswick, Ga., were all explored.

The first mill in which we instituted weight purchase was the Chillicothe, O., Division. This was followed closely by installations at Kingsport, Tenn.; Harriman, Tenn.; and Sylva, N. C.

Our Lynchburg, Va., mill will go on weight purchase in early 1959—the program was delayed here due to woodyard redesign. Escanaba Paper Co., at Escanaba, Mich., has not been placed on weight scale principally because of the high percentage of peeled wood used and possible changes in procurement policy as regards season of logging and type of wood acceptable. We do not feel that peeled wood lends itself to purchase by weight for the obvious reason of the tremendous variations that develop in moisture content.

Objectives of Weight Scaling

The principal objectives we had in mind in converting to weight scale were as follows:

1. Devise a method of payment which would be commensurate with the volume of pulping tonnage received.

2. Pay a premium for high yielding deliveries of well prepared wood and penalize low quality loads of wood.

3. Standardize scaling practices and eliminate the human element.

4. Speed up scaling time and reduce manpower required for this job.

5. Encourage the delivery of fresh prepared wood which barks more easily and assures more uniform moisture content for cooking.

It was not our intent to change the average price per cord of wood in establishing purchase by weight. This is to say that the average weight of the sampled deliveries would govern the hundred or ton weight price established.

Type of Scaling Equipment

Our scale installations varied slightly with mill location. Three of our mills used old scales which were renovated and set in new pits. All of the scales were Fairbanks-Morse design, however. The Kingsport, Tenn., installation which is completely new is a Fairbanks-Morse 45 ft. by 10 ft. concrete platform scale (Code #6509). The scale cost $4,824 plus the installation cost of $5,200 or a total of $10,024. It is a 50-ton scale with double-faced dial and Printomatic recording device. It records to the nearest 20 lbs. The Printomatic device prints directly on our scale card, which is a McBee card, to facilitate tabulating operations of Woods Department data.

It is our recommendation to install the scale head and scale office as close to the scale platform as possible. The design of the scaling office is important and it is our feeling that an extended bay with glass on three sides enables the best vision for the scale operator. Our Sylva mill has such an installation.

Method of Preparing Basic Data

The objective of our basic data was to determine the average weight per unit of 160 cu. ft. (or cord of 128 cu. ft.) of the wood which we were currently receiving. We have previously stated that it was not our intent to change the price of the average cord of wood in converting to weight scale.

Thus, at the Chillicothe operation, we volumetrically scaled and weighed 17,500 truckloads of mixed dense hardwoods over a period of 44 weeks. The average weight per unit of 160 cu. ft. was determined to be 6,316 lbs. The major percent (86%) of this wood was made up of the several species of oaks. Weights of various other species, such as elm, ash and hard maple, were developed where pure loads were delivered. However, since these species only constituted some 14% of our total truck deliveries, the weighing as individual species was purely of academic interest. We definitely were not attempting to establish the weight per cord of any given species.

The weight data was summarized by weeks and by periods to determine fluctuations attributable to weather and seasons. When we were satisfied that the weekly data was consistent, the total statistics were summarized and a statistical average was determined. The statistical data should be analyzed by a qualified statistician.

The Kingsport, Tenn., mill, having the benefit of our Chillicothe experience, weighed slightly over 8,000 loads of mixed soft and dense hardwoods over a 24-week period. Their data was reasonably consistent and the statistical average developed indicated 95% reliability of plus or minus 26 lbs.

The Harriman, Tenn., mill weighed only 2,500 truckloads of mixed oaks over an 8-week period and the result was a very consistent average weight with a 95% reliability of plus or minus 15 lbs.

The average weights having been determined with satisfactory reliability ratings, the next step is, of course, a simple translation of present price per cord or unit to cents per pound, hundredweight or ton. Thus $12 per cord, where the average cord weighs 4,000 lbs., translates to 30¢ per hundredweight or $6.00 per ton.

Variations in Weight Per Unit

Variations in weight per unit obviously are encountered and may be quite conspicuous between individual loads. The main factors causing the variations are as follows:

1. Variations in solid content per unit.

2. Human error in measuring volumetric conversion factor.

3. Variation in wood density within species.

4. Foreign material (mud, snow and ice) clinging to wood during rough weather logging conditions.

5. Moisture content of the wood itself; however, seasonal variations—dormant and nondormant—were insignificant.

It must be recognized that in buying by weight and especially in setting up data for such a program, only fresh-cut wood will give consistent weights. Wood allowed to dry out for a period of several weeks, during warm dry weather, will lose considerable weight. Our observations indicate that peeled wood does not lend itself to weight purchase as it is delivered in varying degrees of moisture content. We still buy peeled wood on a volumetric basis.

I have intentionally omitted quoting weights for various species as this is not pertinent to establishing a weight purchase program. However, at our mills, mixed oaks which are the principal species used, varied from 4,300 to 6,300 lbs. per standard cord of 128 cu. ft. This in itself should warrant consideration of pulpwood by the pound.

Introduction of Weight Scale

Mead conversions developed certain procedures in initiating purchase by weight and I will cite them for what they are worth:

1. Do not attempt to establish a standard weight per cord for a given species.

2. Determine statistical average weight per cord of wood being received and convert on basis of present

Robert C. Barienbrock

Pulpwood by Pound Makes Sense to Buyer and Seller

"The seller gets a premium for good wood that is well prepared, is assured consistent measure free of the human error element and benefits by more rapid processing of his scale," says Mr. Barienbrock.

"The purchaser buys a known quantity of raw material, saves labor in scaling and is free of a continuous vigilance on solid content specifications.

"We are extremely well satisfied with 'pulpwood by the pound' and our producers have not only accepted the change but are strong advocates of the method themselves," he stated.

cord price. Don't change the price for the average cord.

3. Weigh sufficient volume of wood, prior to going on weight basis, to develop a favorable psychological anxiety on the part of the producer to affect the change.

4. When the change-over is announced, refrain from referring to the average weight per cord, state merely the equivalent to your present price is *X* cents per hundredweight or ton. The relationship between weight and cubic measurement is confusing.

5. If questions arise in the settlement by producers of stumpage, hauling or other contractual arrangements which are normally settled on cord basis, translate the same in terms of the hundredweight or thousand pound conversion:

produce more uniform chips... reduce downtime and waste with WAPAKONETA *Hi-Production* CHIPPER KNIVES Wood room costs go down —when you install Wapakoneta HI-PRODUCTION Chipper Knives. Production is more uniform with fewer splinters and oversize chips . . . less dust. Knife edges stay sharp longer without reconditioning.

Check these features. You'll see why HI-PRODUCTION Knives mean top quality chips . . . extra hours of full capacity operation:

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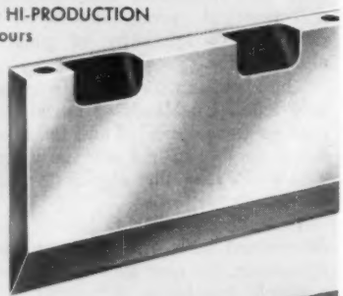
3. Keen knife edge and smooth face are precision ground for clean cutting. When necessary, sharpening is easy . . . fast.
4. Available in every size, single or double bevel. Engineered to fit the particular job.



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TRADE MARK

Following are excerpts from other papers on weight scaling of wood given at the APA Lake States Technical Committee 1958 fall meeting in Duluth, Minn.:

Results in the Northeast of Weight Scaling of Hardwood

By Ed C. Melcher, Woodlands Mgr., S. D. Warren Co., Cumberland Mills, Me.

We installed a set of Toledo scales called "Print Weigh." They are 10 x 50 ft. and have a capacity of 100,000 lbs. The weight is printed automatically on the weight slip. It has a dual face so the trucker can read the scale. The cost of the scales was $5,020 and the installation cost $7,600. This included steam heat, toilet facilities, sewer and water lines.

The decision to purchase by weight was a difficult one. We have a low inventory for the Northeast and the common practice has been to cut wood ahead, then sell it several months later. Whether we could get green wood against our competition buying by scale and paying as much for dry as green was problematical.

While this buying by weight has been done in the South and West, it is new in the Northeast. In Maine, we were the first. Our decision to change was in good timing because of the economic conditions. We could get wood under any circumstances. We went ahead. We had to have a man to weigh in chips anyway.

Our tests showed us that there was a tremendous variation in the weight of wood over a week old, but the average weights on fresh cut wood changed very little. On our own operation which is really hot wood, the accumulated average on Jan. 1, 1958 was 5,763 lbs. per cord, on April 14 it was 5,769 lbs. with intervening weeks running between these figures. After weighing and compiling our figures we sent them to our technical service for analysis. We finally came up with a factor of 5,600 lbs. We did not use the figures from our own operation in arriving at this figure as this wood is handled much faster than the ordinary producer can operate.

We are test scaling every tenth load to check our factor. The four months' total from May 1, when we started buying by weight, to Sept. 1 shows a minus of 16 lbs. or about ¼ of 1%. We probably will check for a full year.

Our tests show dry hardwood averages 5,303 lbs. This ranges from a month to a year old. We are gradually getting greener wood. Right now it is running 80% fresh cut. I probably

should mention that we get about 30% red oak, in mixture.

At first we had quite a few complaints, especially from those who were chronic kickers on the scale anyway. Now there seems to be general satisfaction. Some even say they were over-scaled before. Anyway they all want larger contracts.

During our year of testing we found very little difference in average weight by seasons. It is a simple and accurate way to measure wood. Once you're in it you wouldn't change. There is no question that we are getting better quality wood and better yield. Our mill wants green wood and we understand that in the South, they estimate 1% deterioration for every month of age. We feel the same.

This method has driven many of our producers to change from stump wood to tree length skidding to a truck road. If the log has to lie over a day or two it will not dry out as much as 4-ft. wood. This has lowered costs.

We have only three scalers. We did not gain this way. We do, however, place one of them on our unloading conveyor. His duty is to inspect every load and send back poor wood, etc. This is weighed out. If a man is on vacation or out sick we do not have to replace him. The bookkeeping on contracts and quotas is done by the head scaler—an additional job. It takes about 40 seconds to weigh a load. Under the old method we held trucks up to scale and then we had no inspection so we are doing more with the same men.

We do not pay for each load as delivered as some do. We will pay once a week. Our price is based on so much per 1000 lbs. This sounds better than a price per pound. We think it good psychology.

This is the only way, in our opinion, to buy rough, green wood. We wouldn't go back to the old method.

Buyers of Rough Green Wood Will Make Savings

By Harold S. Olson, Mgr., Wood Procurement, Wood Conversion Co., Cloquet, Minn.

The transition from purchasing wood on a volumetric basis to one of weight involves one of the most complex problems in public relations that a wood-using industry can be called upon to solve. Involved are traditions centuries old, deeply rooted suspicions of motives of any proposal by an industry which advocates something new and different. There is a hurdle no less in magnitude in selling management on the idea. . . .

If you are a purchaser of rough, green wood in units of the same specie, then in all probability you can purchase your wood by weight at a considerable saving in overall operating efficiency, while at the same time improving your supplier relations. For those who can use the method, it is good public relations.

It is essential that research pointed toward the setting of standards be thorough and accurate, so that your suppliers will recognize that for a given unit of wood of the usual size and quality that they will receive the same number of dollars that they did before the change. Because of this factor, you will find that the overall quality will improve.

It is important that the scalers be thoroughly briefed on the program and that they understand it completely when starting a program such as this. It is also essential that sufficient time be taken to explain to each supplier the advantages. It is important to stress that you are aiming at uniformity in payment, that you desire to be as fair as possible in order to assure both seller and buyer a fair deal.

The type of scale is important. We purchased a 50-ton, 50-ft. platform automatic recording Fairbanks-Morse scale. This scale automatically prints the gross and tare weights on the scale ticket, which is in the form of a negotiable check. This check, when signed by the scaler, is the same as cash and spendable anywhere. Before adopting this method, we ran comparative checks for a period of three years involving many thousands of cords of wood to check our scaling versus weight.

In the over ten years that we have used this method, we have not had one supplier complaint, we have achieved an excellent degree of age control, and our variations in wood usage have been considerably lessened.

When H. R. MacMillan Took the Law To Forest "Jungle" It Was No Joke

British Columbia's original forest legislation was just about the best in the world, but got on the statute books only because the politicians couldn't understand it, according to H. R. MacMillan, founder of the MacMillan & Bloedel timber empire in Canada's west coast province.

Addressing a testimonial luncheon in Vancouver to Dr. Chauncey D. Orchard, retiring deputy minister of forests and chief forester, Mr. MacMillan, recalled how, during the first decade of this century, big land companies were moving in and corraling some of the finest timber.

The government of the day decided something should be done about this and appointed a royal commission of inquiry comprising politicians who knew little about the forests. The commission appointed a secretary, but made the mistake of paying him $2500 in advance. The secretary vanished, and a successor had to be named. One of the commissioners suggested his speech writer, a young Oxford graduate named M. A. Grainger.

"Grainger was the only one who seemed to know anything about what the commission should do," said Mr. MacMillan. "He brought in experts from the U.S. and other countries and helped frame the proposed law. It was so complicated that the legislature couldn't understand it, so swallowed it in one chunk."

MR. MACMILLAN

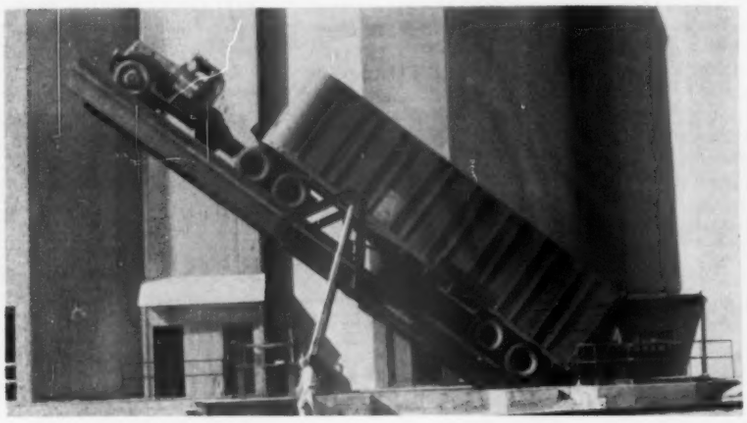
Mr. MacMillan was hired to enforce it as British Columbia's first chief forester. Mr. Grainger was named his assistant. A few years later, Mr. MacMillan left the government to lay the groundwork for what was to become one of the world's great forest industry corporations. Mr. Grainger succeeded him as chief and later became a lumber executive.

In those days, Mr. MacMillan said, he had socialistic tendencies and was indignant about the activities of some big corporations. But when he boldly attempted to expose them, the premier told him to keep his mouth shut. Another time, Mr. MacMillan was inspired to increase timber royalties to the government. "Fortunately somebody killed it," he said, "and it wasn't long before I was very relieved they had."

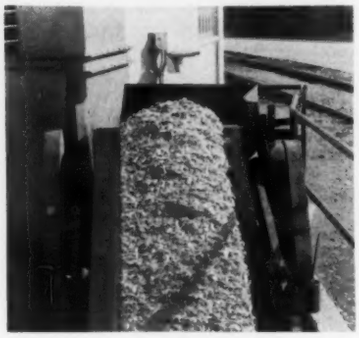
How Scott Receives Outside Chips

Scott Paper Co. has installed facilities over a two-year period for receiving outside chips arriving by all types of surface transportation at its big Everett, Wash. plant. Wood utilization—previously including salvage timber and rail-hauled by-product chips of lumber and veneer mills—has recently been extended to include chips arriving via highway and water transport by installing new Link-Belt chip-handling system.

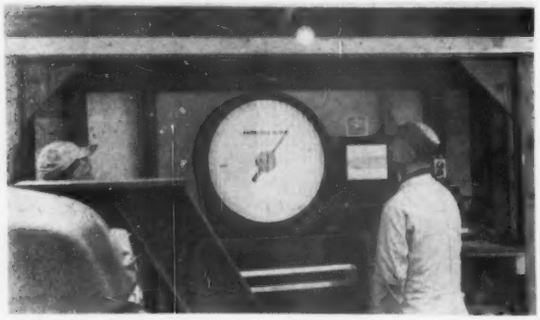
DUMPED CHIPS pass from receiving bin to inclined transport belt (bottom left) via Link-Belt rotary feeder at controlled rate.



DISCHARGING 10-UNIT LOAD of by-product chips into handling system with hydraulic Link-Belt tilting unloader. Humphrey Elevator Co. man-lift alongside silos (behind truck cab) enables silo operator to run new unloading-handling system in addition to former duties.



SYSTEM MOVES CHIPS from feeder to bucket elevator (top left) on Quaker-Pioneer 36-in. belt.



QUANTITY OF ARRIVING CHIPS is determined quickly and accurately by Fairbanks-Morse printing scales. Prior to installing system for truck-hauled chips, operator at right tended chip silos only. By adding man-lift he now operates chip-receiving system also.

BARGED CHIPS, arriving at Scott plant from various Puget Sound mills, are unloaded with 3½ cu. yd. capacity Erie-Strayer bucket (purchased from Electric Steel Foundry Co.) which deposits them in company truck of 4-unit capacity for across-plant delivery to chip-handling system. Dozer-equipped D2 Caterpillar tractor keeps chips bunched to facilitate rapid unloading of 500 to 600-unit bargeloads.

Trees Seem Identical But They Aren't, Canadian Research in Fibers Reveals

There is a wide range of difference in cellulose, specific gravity, and fiber characteristics between trees of apparently identical stock, Prof. R. W. Wellwood, forestry faculty, University of British Columbia, told a recent meeting of the Pacific Coast branch, Technical Section, CPPA, in Vancouver, B.C.

But, he added, research shows that trees have a tendency to inherit their characteristics rather than become subject to environmental conditions. One of the objectives, said Prof. Wellwood, is to check on variations in these wood characteristics and relate them to a genetics program.

"There is an apparent genetic effect whereby trees having fibers either initially shorter or longer than average will retain that feature as they continue to grow," reported Prof. Wellwood. "Of the factors affecting fiber length in western hemlock, age of the growth ring (in rings from the pith) had the strongest effect. Fibers were significantly shorter at the base than higher in the tree. Site had no apparent effect but crown class did. There is also an apparent genetic effect, as in fir.

"Wood, even of the same species, is an extremely variably material. In the solid form it varies in strength; when used as pulp it varies in yield, and in the properties of paper produced from the pulp."

Prof. Wellwood added that new avenues in the study of variations in wood are possible where sampling is done without injury to the living tree. Variations can be related to genetic and to environmental factors, permitting a selection of trees having superior growth characteristics. Efforts can then be made to capitalize on propagating from trees of desirable qualities.

Other Meeting Reports

Dr. J. L. Keays, Powell River Co., acted as chairman of most of the functions. Accent was on converting plants. All the technical papers presented related to the converting processes, J. L. Godding, Crown Zellerbach Canada, outlining the relation of raw stock qualities and converting at the company's new Richmond, B.C., plant; J. Connor, Westminster Paper Co., telling about his mill's transparent waxing operations, and H. Townsend and R. C. Lemon describing corrugated container manufacturing and sales quality problems encountered at Martin Paper Products, jointly owned by Powell River Co. and MacMillan & Bloedel, with J. H. Shumka of the latter company presiding.

More than 100 delegates made bus trips to the mill of Westminster Paper Co. and Richmond plant of CZC during the convention.

Guest speaker at the dinner meeting was Ken G. Fensom, superintendent of the new $1,000,000 Forest Products Laboratory recently completed at Point Grey for the Department of Northern Affairs and National Resources, and those who toured the modern buildings were impressed with the advanced equipment.

American Delegates Attend World Conference in Geneva

W. S. Bromley, executive secretary of the American Pulpwood Association, and Mrs. Bromley flew to Paris on the new Pan-Am jet plane Dec. 6, en route to an international conference in Geneva, Switzerland, on forestry and logging labor matters.

The conference, Dec. 8 to 19, was scheduled to deal with three subjects: 1, accident prevention in the woods; 2, living and working conditions in logging camps; and 3, labor-management relations. The United Nations is the sponsor and 24 nations sent delegates. Mr. Bromley represented the Forest Industries Council, comprised of APPA and the National Lumber Mfgrs. Assn. as well as APA.

Harold Holden, vice chairman of the board of Standard Packaging Corp., and George Tichy, West Coast Lumbermen's Assn., are employer delegates from the U.S. The labor delegates from the U.S. are A.F. Hartung, International Woodworkers Union, and Ken Davis, Brotherhood of Carpenters and Joiners.

Positive Seal Truck Wheels Require No Grease

Allis-Chalmers announces that greasing by the user is no longer necessary on their Positive Seal truck wheels, front idlers, and support rollers for their entire crawler tractor line. These wheels are lubricated at time of assembly and need no further greasing attention. This makes possible complete elimination of greasing the tractor undercarriage regardless of mud, water or other adverse operating conditions.

Holds First Technical Meeting in West

Pulpwood chips—their production, measurement, and handling—was the theme of the first meeting of the newly formed Western Technical Committee, American Pulpwood Assn., on Dec. 9 at the Sheraton-Palace Hotel, San Francisco.

G. B. Amidon, president, APA and woodlands mgr. for Minnesota & Ontario Paper Co., and Western committee chairman R. L. DeLong, St. Regis, Tacoma, Wash., were to address the group. The program:

Southern Chip Program—T. N. Baker, St. Regis Paper Co., Jacksonville, Fla.

Transporting Chips by Rail—L. J. Forrest, Rayonier Inc., Hoquiam, Wash.

Transporting Chips by Truck—H. E. Lovejoy, Puget Sound Truck Lines, Inc., Seattle.

Unloading Chips from Railroad Cars— R. P. French, Larson and Baardson, Inc., Portland, Ore.

Storing Chips in Outside Piles—L. H. Blackerby, Western editor, PULP & PAPER magazine, who bases at Portland, Ore.

Reclaiming Chips—Edmund Ericksen, Georgia-Pacific Paper Co., Toledo, Ore.

Chip Compaction—Jay Gruenfeld, Weyerhaeuser Timber Co., Tacoma.

Chip Specifications—Joseph Robinson, Simpson Paper Co., Everett, Wash.

Northestern Chip Concentration Yard (Slides)—J. S. Hensel, APA forest engineer, Wausau, Wis.

Round Table Discussion—Pulpwood Chips.

Fixmer Wins Safety Contest

FRANK N. FIXMER, Forest Manager, Mosinee Paper Mills Co., Mosinee, Wis., wears chrome-plated hard hat awarded by Lakes States Technical Committee of The American Pulpwood Assn. Assn's. 1957 Safety Contest for industry members.

THIS IS
DRYDEN
PAPER
COMPANY

Customer's one-word report on this pulp: "WONDERFUL!"

Back in the Spring of 1956, one of America's leading paper makers began to look for ways to improve their products. They realized that, to get a better product, they had to start with a better pulp.

The engineers and lab men at this plant heard reports about a new pulp coming down from Canada—the two-stage chlorine dioxide Northern bleached sulphate pulp that Dryden Paper Company would soon be producing at its new Dryden, Ontario, plant. So these paper men ordered a fifty-pound sample of Dryden, unbleached, so that they could bleach it and follow it through into paper in their own labs.

Their one-word report: "Wonderful!"

Soon after the opening of the Dryden plant in 1957, they contracted for several thousand tons of Dryden pulp for each of the next five years...but they soon came to rely on Dryden as their *only* source for quality pulp, continually upping their shipping orders. 1958 shipments are nearly three times the original tonnage.

Compare Dryden Bleached Sulphate with the best quality pulp you know. You, too, will say it deserves all the laboratory endorsements—*and all the production testimonials*—it now enjoys. Order a trial shipment today.

DRYDEN PAPER COMPANY, LIMITED
DRYDEN, ONTARIO, CANADA

SOLD BY: **Anglo Paper Products, Ltd.**
2055 Peel Street, Montreal 2, Quebec
67 Yonge Street, Toronto 1, Ontario

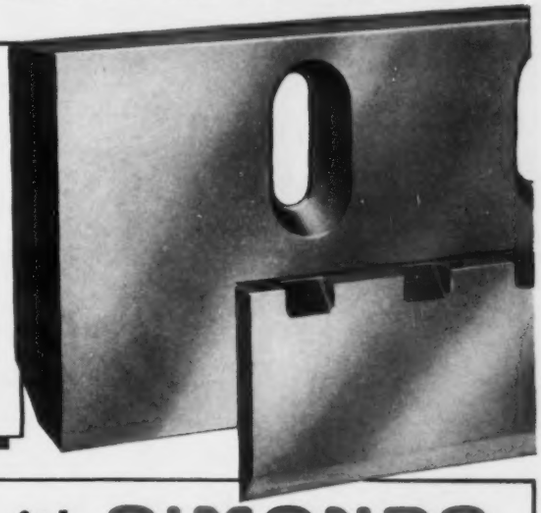
SALES REPRESENTATIVES IN THE UNITED STATES:
Northeastern Paper Sales, Inc.
400 Madison Avenue, New York 17, N. Y.
20 North Wacker Drive, Chicago 6, Ill.

Your Work is Cut Out for You- DEPENDABLY, QUICKLY, ECONOMICALLY

-with SIMONDS T-18 Chipper Knives

More Chips in Good Shape!

For more usable chips and less waste dust, get Simonds T-18 Steel Knives. They're made extra tough to take high speeds and heavy cuts without cracking or chipping out. They hold a sharp cutting edge *hours longer*— produce uniform chips *hours longer*.



-with SIMONDS RED STREAK Paper Knives

Their Keener Edge Stays Sharp Longer!

Simonds-made S-301 Steel — developed especially for cutting paper — combines maximum hardness with toughness to give you more cuts per grind. Face-side taper, concave ground for added clearance, plus Simonds famous "mirror finish," provide a keener edge that cuts free, fast and straight. There's longer life in a Simonds Knife!

-with SIMONDS Circular Cutters

They Run True and Hold Their Edge!

On thinnest tissue or thickest board, Simonds circular cutters, slitters and perforators cut smooth, easy and true. These "cost cutting cutters" are made of Simonds own special electric-furnace steel — specially heat treated and precision-ground to uniform roundness and thickness. There is no better steel for edge holding. There is no better value for your cutter money.

For Fast Service from Complete Stocks

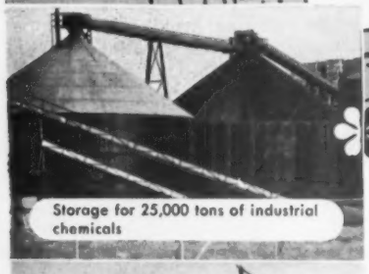
Call your SIMONDS Industrial Supply DISTRIBUTOR

SIMONDS SAW AND STEEL CO.
FITCHBURG, MASS.

Factory Branches in Boston, Chicago, Shreveport, La., San Francisco and Portland, Oregon, Canadian Factory in Montreal, Que., Simonds Divisions: Simonds Steel Mill, Lockport, N. Y., Heller Tool Co., Newcomerstown, Ohio, Simonds Abrasive Co., Phila., Pa., and Arvida, Que., Canada

West End "fills the order" for free-flowing salt cake

TO PLANT. JMA JC JVM WS
NEW CUSTOMER REQUIRES 400 TONS* SALT CAKE
99.5 PERCENT IN BULK COVERED HOPPERS*
DELIVERED JACKSONVILLE FLA. JULY 7 FOR
START-UP. FUTURE REQUIREMENTS PROBABLY
200 TONS PER WEEK.* INFO ONLY. SCHEDULE
FOLLOWS. END.
TO OFFICE.
CAN DO. WILL USE 9 DAY TRANSIT. WILL
SHIP 2 CARS TODAY AND BALANCE OF FIRST
400 TONS TOMORROW.


Storage for 25,000 tons of industrial chemicals

Immediate shipment in leased hopper cars

Vast natural source of raw material

Meeting service requirements to the letter and producing superior salt cake of consistently accurate particle size and chemical analysis are the essentials to which the West End organization is uniquely geared. A system of rapid communications linking our sales office in Oakland with our production, technical and shipping departments at the desert plant site permits each department head to have a complete understanding of the customer's individual requirements and to make firm commitments or provide the desired information promptly.

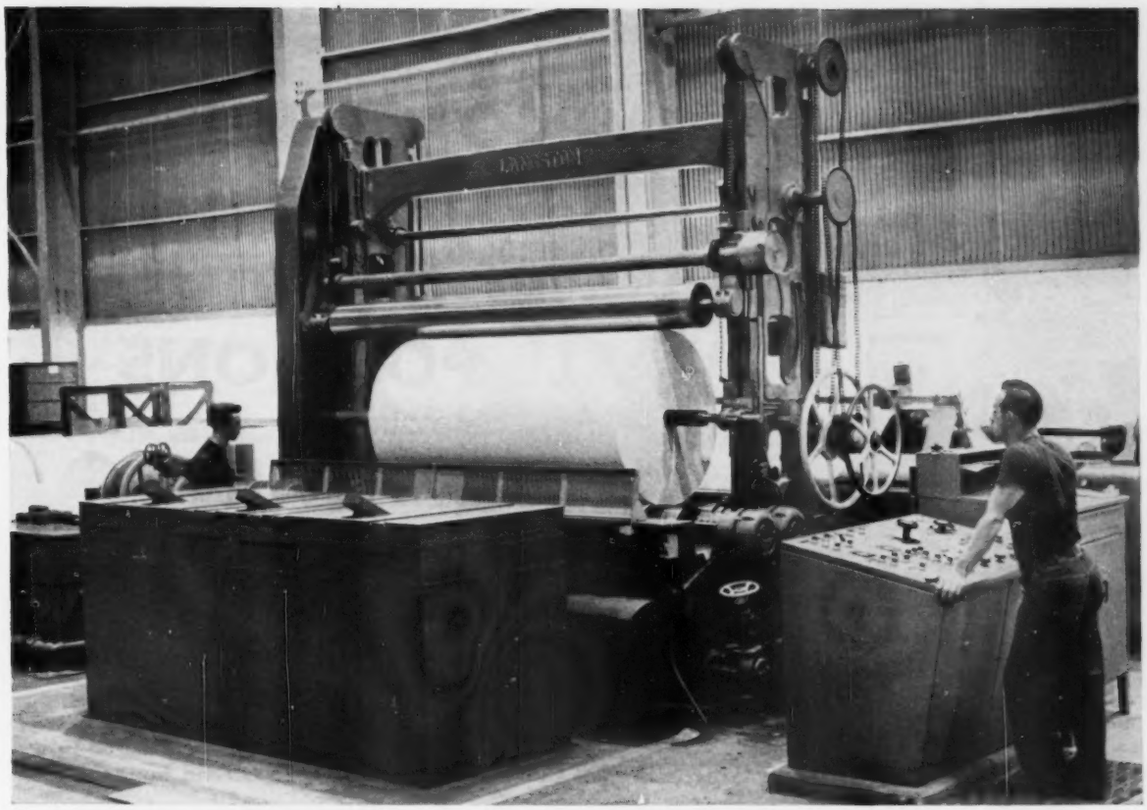
WEST END

Stauffer

WEST END CHEMICAL COMPANY

DIVISION OF STAUFFER CHEMICAL COMPANY

EXECUTIVE OFFICES, 1956 WEBSTER, OAKLAND 12, CALIF. • PLANT, WESTEND, CALIF.



One of the two 104-in. Langston Slitters and Winders in the Glatfelter mill completing rewind. Roll drop table in foreground is up, ready to receive roll when ejected by the winder, and chocks are in raised position to stop the roll. Note console incorporating all major indicators and controls.

Langston Slitters and Winders turn out tight, even rolls at Glatfelter Mill

Two 104-in. Langston Slitters and Winders have been working in the new mill of P. H. Glatfelter Co., Spring Grove, Pa., for more than a year. They have proved themselves in round the clock production on grades from fine papers to book.

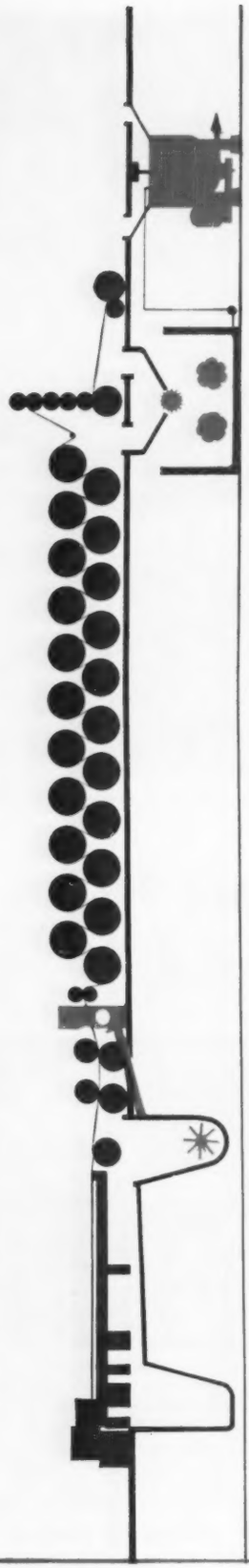
One of the most important features, according to the company, is the constant tension unwind control on the Langston Shaftless Roll Stand, which keeps the tension constant throughout the winding operation. Perfect rolls can be turned out from 9 to 100-lb. stock in roll widths from 7½ to 104 in.

The equipment can be quickly loaded and lined up on the back stand and is designed for easy threadup and gang slitter setting. Hydraulic roll ejectors move the finished rolls quickly from the winding position to the roll drop. Other features include shearcut slitters to eliminate dust; many interlocked controls for extra safety; automatic edge guide control to allow precision trim rewinding of narrow and salvage rolls.

Find out how Langston Slitters and Rewinders can benefit you. Write SAMUEL M. LANGSTON CO., 6th & Jefferson Sts., Camden 4, N.J.

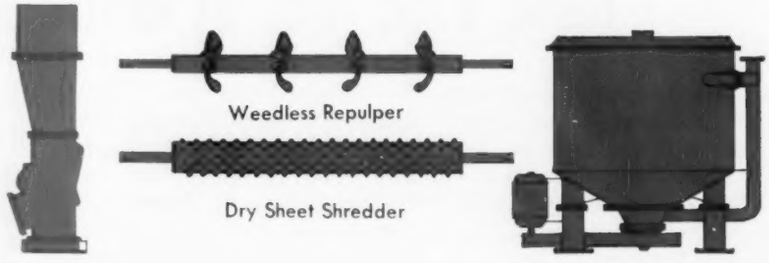
Langston Shaftless Unwind Stand eliminates back-breaking, time-consuming task of hoisting heavy shafts into place. Hydraulically operated arms reach out, pick up the roll, and raise it into running position — a 1-man, pushbutton operation.

LANGSTON Leadership...by design



IMPCO OFFERS COMPLETE *BROKE PULPING* AT ALL POSITIONS ON YOUR PAPER MACHINE

Over two thousand Impco Agitators for every conceivable mill requirement, both before and after the paper machine, are in successful operation. As a pioneer in the designing of such equipment, Impco also regularly builds broke handling devices for various positions under the paper machine. Consequently, such units as Couch Pit Agitators, Sheet and Roped Press Broke Shredders, Dry Sheet Shredders, Solvo Pulpers and Defiberers have been developed. As a result of this mill proven experience, Impco can provide you with either a complete broke handling system or individual components.



IMPCO® IMPROVED MACHINERY INC.
NASHUA, NEW HAMPSHIRE

In Canada, Sherbrooke Machineries Limited, Sherbrooke, Quebec

Strictly Personal

South

JOHN TAGGERT, prod. mgr. of Mead Corp.'s Kingsport, Tenn. division for the past three years, has been promoted to asst. div. mgr. He has been with Mead since 1933. . . FRANCIS ARMSTRONG, chemical engineering graduate of the U. of Colorado and a member of St. Regis' staff since 1956, has been named bleach plant supt. of the Pensacola, Fla., mill. He steps into the spot vacated by LEWIS WHITE, now asst. supt. of the No. 1 pulp mill.

NOEL R. PHILLIPS, tech. dir. of Riegel's Carolina div. since 1954, has been appointed to the newly-created position of tech. coordinator of Carolina Paper Sales. He will serve as liaison between sales and manufacturing. J. TATNALL LEA, JR., a sales rep. with Riegel since 1955, becomes mgr. of Southeastern sales, a new position. . .

EDWARD F. KANE, JR., formerly with the chemicals div. of Olin Mathieson, has been assigned to the sales staff of Ecusta Fine Paper Div. He was recognized as Olin Chemical Div.'s "Top Salesman" in 1957 and 1958.

STURE G. OLSSON of West Point, Va., pres. of Chesapeake Corp., has been re-elected president of the Pulp and Paper Foundation of North Carolina State College . . . also at North Carolina State, NORMAN RUSSELL of Raleigh, top-ranking junior in the school of forestry, has won a $400 scholarship presented annually by the Southeastern div. of the Supts. Assn.

ESTON O. STRENS has joined Gulf States Paper Corp. as eastern sales mgr. for pulp manufactured at Demopolis Pulp Mill. He spent four years with Marine Intelligence in the Pacific during World War II. . . . ERNEST G. WILLIAMS, vice pres. of the First National Bank of Tuscaloosa, Ala., has been elected a Gulf States director. . . . JAMES DIEHL, Sonoco Products engineer, has been promoted to technical asst. to the supt. of power, L. A. TURNAGE. . . .

Memo to delegates who attended the Southern and Southeastern Supts. meet-

An Awful Lot of Facial Tissue

. . . is represented in this first-place winning Homecoming display at Georgia Tech's Lamda Chi Alpha fraternity. It also represents a new use for tissue—for 70,000 individual sheets were hand-crinkled to make this "fluffy pink elephant." It took the fraternity members four months to make it.

Tribute to Elis Olsson, Paper Pioneer

Carl Olsson Mrs. Nylander Elis Olsson Mrs. Olsson Sture Olsson

ELIS OLSSON, who began his career in this country in 1906 as a 13½ cents an hour papermaker, receives a framed resolution from his son honoring him for his contributions to industry and community life. The former president of the Chesapeake Corp. is now chairman of the board. Son, STURE, is president and son, CARL, is vice-president. Mr. and Mrs. Olsson's daughter, MRS. LENHART NYLANDER, is wife of the Swedish Ambassador to Central America.

One of the leading papermaking pioneers in the U.S. has been honored by his home town in Virginia as an "imaginative man of science, business and philanthropy."

Elis Olsson, who came to West Point, Va., U.S.A., from his native Sweden in 1915 and established the present management of the kraft pulp and paper mill there, was the subject of a four-day celebration commemorating the 40th anniversary of the corporation.

Mr. Olsson chartered Chesapeake Corp. in 1918, leasing and later purchasing the old Chesapeake Pulp & Paper Co., which had been operating at a loss since 1914. He redesigned the mill and made it a success, contributing a great deal to the science of papermaking at the same time. A town council resolution honored Mr. and Mrs. Olsson as "creative and public-minded citizens."

Strictly Personal

ing in Chattanooga: a friend of ours confides that glasses won't hurt your looks a bit—as long as you don't empty too many of them.

E. NEESE STUART will be office mgr. and P. HOWARD SHIKOSKI, supervisor of specialties, at Sutherland Paper Co.'s new Albany, Ga., div., scheduled to crank up early in 1959. ROBERT S. BRECKENRIDGE will manage the $1.5 million converting operation. . . .

L. FRANK THOMPSON, mgr. of West Virginia's Charleston, S. C., mill has been appointed mgr. of the Hinde & Dauch div. of the West Virginia Pulp & Paper Co. ROBERT L. BENTLEY, since 1951 asst. mgr. of the firm's bleached board div. at Covington, Va., has taken over the reins of the kraft div. at Charleston. . . .

JOHN R. TAGGERT was promoted to asst. div. mgr. of The Mead Corp.'s Kingsport, Tenn., mill. Mr. Taggert has been with Mead since 1933 and was formerly production mgr., at Kingsport. . . . JOHN DOHERTY, chemistry graduate of Adelphi College, was appointed sales representative for paper starches in the southeastern div. of National Starch Products, Inc. He will live in Jacksonville, Fla . . .

S. B. LAMICA has been appointed manager of the Jacksonville, Fla., district of Allis-Chalmers Industries Group. He succeeds J. T. GRAHAM, who has been named supervisor of sales training for the group in Milwaukee. Mr. Lamica had been a sales rep. in Allis-Chalmers Tampa, Fla., district since 1952. . .

Final note: Crossett's magazine Forest Echoes reports that Taxes are the state most of us are deep in the heart of!

—William F. Diehl, Jr.

Elmer Leavitt Named Tennessee River P&P Mgr.

Formerly manager of the Plymouth, N.C., mill of Kieckhefer Div., Weyerhaeuser Timber Co., he will be resident mgr. of the new mill being built at Counce, Tenn., by Tennessee River Pulp & Paper Co. His appointment is announced by GUNNAR NICHOLSON, president of Tennessee River P & P.

Northeast

WILLIAM H. CADDOO, general manager of the Gair Boxboard and Folding Carton Div., Continental Can Co., has been elected a vice president of Continental. A graduate of Colby College, he joined the Robert Gair in 1933 as a chemist at the Haverhill, Mass. mill. He served as technical director and vice president of Gair . . .

HANS E. UNANDER-SCHARIN has joined Merrimac Paper Co., Lawrence, Mass., as production manager. A graduate of the Technical Institute of Stockholm (m.e.), he also has a pulp and paper degree from N.K.I. Institute of Stockholm. He has worked with The Ruberoid Co., Gloucester City, N.J. and recently was plant manager of A. & P. Corrugated Box Corp., Lawrence, Mass.

Also at Merrimac, L. B. ROGERS, plant engineer, is now in charge of power development . . . JOE M. THEBERGE has been promoted to beater room supt. . . . RAYMOND J. VARTANIAN has joined the APPA staff as assistant secretary of the safety committee . . .

GEORGE R. SETTERLUND has joined Oxford Paper Co. as assistant steam plant supt. . . . CHARLES F. FISCHER has been promoted to supervisor for steam power and JOHN A. ROGERS takes over full time as assistant chief engineer. In Oxford's research dept., HOWARD S. DEGROOT is now group leader for coated papers. CYRIL E. JOHNSON steps up to technical service engineer for machine coated papers.

GEORGE R. WALLACE, president, Fitchburg Paper Co., has been elected a director of the American Cancer Society (Massachusetts Division) . . . BED KADDY, new tour boss at Fitchburg Paper, is mighty proud of his son, First Lt. BEDFORD JR., who has been nominated as outstanding junior officer of the 70th Strategic Reconnaissance Wing . . .

ORBBIE K. WEBBER moves from St. Regis Paper Co.'s Deferiet, N.Y. mill to the East Pepperell, Mass. mill as personnel mgr. . . . WINSLOW B. MILLS is mill manager of St. Regis' newly reopened Carthage, N.Y. mill . . . JOHN J. STEINBINDER advances from supt. of Riegel Paper Corp.'s Warren mill to supt. of converting at the Milford, N.J. mill . . . THOMAS H. RUTT succeeds him at Warren and RICHARD W. FLORES steps up as quality control supervisor . . . WILLIAM H. HOLL, formerly production mgr. at Victoria Paper Mills has joined Riegel in new post of asst. to ALAN SCHENCK, mgr. of the Warren, Hughesville and Riegelsville mills . . . WOLFGANG O. WILFERT, formerly with General Tire & Rubber Co., joins Riegel as coating dept. supt. at Milford . . .

JOSEPH M. KITCH, formerly manager of International Paper Co.'s container division's Geneva, N.Y. plant is now plant mgr. of their new corrugated box plant at Philadelphia, Pa. JOSEPH A. "PETE" ABBOTT has been named public relations mgr. of IP.'s Northern division. CHARLES BERNHEISEL has joined New York and Penn as an electrical engineer at Johnsonburg, Pa. . . .

EDWARD C. REID, president, American

Vogel

McKnight

Join Oxford Paper Co.

John H. Vogel, Economist for the American Paper & Pulp Assn. joins Oxford Paper Co. as Marketing Research Manager. He is a graduate of Lawrence College, did graduate work in economics at Marquette U. and American U.; began his career as a sales trainee with Nekoosa-Edwards. From 1951 to 1953 he served as Economist and Asst. Chief of the Pulp, paper and paperboard branch of the Forest Products Div., OPA.

George S. McKnight succeeds PAUL M. SCHAFFRATH as research director of Oxford Paper Co. Born in Brooklyn, he is a grad of Dartmouth High School with a degree in physical chemistry from Dalhousie U. Mr. Schaffrath resigned to become mill mgr. of Great Northern Paper Co.'s, Millinocket, Me. mill.

"Mr. Capacitor" Joins Crocker, Burbank

JOHN D. STACEY, recently retired after 35 years with General Electric Co., has been appointed a consultant to Crocker, Burbank & Co. for development, quality control and marketing of their electrical papers. His assignment is part of Crocker Burbank's program of product improvement and new product development in the electrical papers field.

USCOWELD PLASTIC PIPE FITTINGS

Greater Joint Strength—Faster Insertion—Thanks to

THE ONLY SOLVENT-WELD FITTING WITH AN INTERFERENCE FIT!

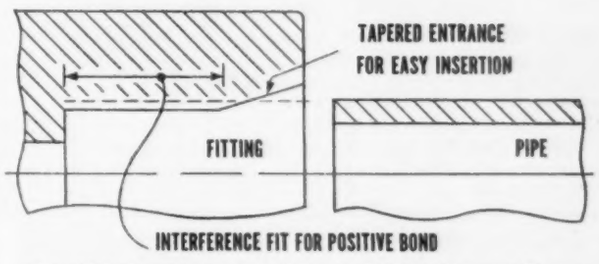
To get maximum joint strength, interference fit is a must! UscoWeld fittings are designed to provide at least a .005 inch *interference fit*. And UscoWeld fittings are a cinch to install because of a specially designed *tapered entrance socket*. U.S. Rubber has developed the unique UscoWeld fitting of the same tough, lightweight, corrosion-resistant thermoplastic as famous Uscolite® CP plastic pipe.

All UscoWeld fittings can safely handle the pressures recommended for the corresponding size of extra-heavy Uscolite pipe. Maximum recommended operating temperature is 170°F. Pipe can be cut to exact length, is easily installed in close quarters.

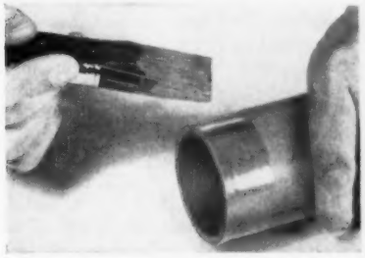
UscoWeld*—plus the most complete line of plastic pipe and fittings in America—is obtainable through your local "U.S." Distributor, any "U.S." Branch, or write us at Rockefeller Center, New York 20, N. Y. In Canada: Dominion Rubber Co., Ltd.

*Patent applied for

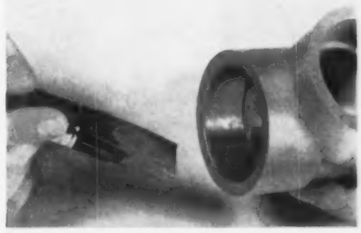
THE USCOWELD PRINCIPLE



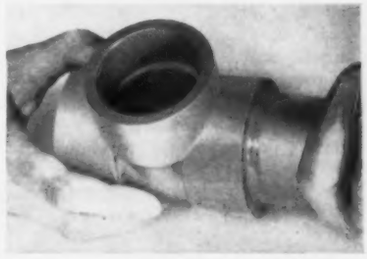
By combining tapered entrance socket and a .005 inch interference fit—even when the pipe is at the small limit of the diameter tolerance and the fitting at the large limit of its diameter tolerance—UscoWeld is easily installed, and the strongest solvent-weld joint available.



Apply Uscolite CP cement to the outside area of the pipe that is to be in contact with the socket.



Next apply cement uniformly to entire inside area of *tapered entrance* socket.



While both cemented surfaces are still wet, insert pipe in fitting and push until pipe bottoms against shoulder in the fitting.

ADVANTAGES

- fast, easy to assemble—tapered entrance provides easy insertion of pipe
- strong joint—interference fit provides for optimum fusion of pipe and fitting into homogeneous mass; joint strength not dependent on cement alone
- automatic alignment of pipe and fittings
- chemical resistance of the UscoWeld joint is the same as for Uscolite pipe
- UscoWeld takes maximum advantage of the inherent "solvent-weldability" of plastic pipe and fittings
- no threading required—just cut pipe square
- not necessary to allow for thread make-up variation—pipe can be cut to exact lengths
- easy to install in close quarters
- resists fatigue due to vibration or thermal stresses by elimination of stress concentration at thread roots.

Mechanical Goods Division

United States Rubber

WORLD'S LARGEST MANUFACTURER OF INDUSTRIAL RUBBER PRODUCTS

Rockefeller Center, New York 20, N.Y. In Canada: Dominion Rubber Company, Ltd.

Strictly Personal

Writing Paper Corp., died at his home in Granby, Mass. Nov. 11 at age 58. He joined American Writing in 1937, became vice president in 1941 and president in 1951 . . .

ARNOLD C. BENNETT is now plant mgr. of the paper machine division of The Black-Clawson Co. at Watertown, N.Y. . . . E. L. DECKER has been named asst. chief engineer, Fuller Co., succeeding ROBERT E. METZGER, who has been appointed chief engineer of the Dracco Division of Fuller, Cleveland . . .

—Maurice R. Castagne.

Kittredge to Address Supts.

GILBERT D. (GIB) KITTREDGE, general supt., Crane & Co. Inc., Dalton, Mass., will address the Thurs. Jan. 8 evening meeting of the Connecticut Valley Supts. Division at the Publick House, Sturbridge, Mass. His subject will be "Preventive Maintenance."

WILLIAM F. NYE, JR., The Hubinger Co., West Springfield, Mass. secretary-treasurer, announced that, following the Jan. 8 meeting, the next scheduled meeting for the Division is May 22, at Strathmore Park, Woronoco, Mass.

Thomas M. McCrary, Westvaco Industrial Relations Mgr.

He succeeds JAMES W. TOWSEN, vice president in charge of personnel, who has retired. Mr. McCrary joined West Virginia Pulp and Paper Co. in 1947 as a lawyer. He is a member of the bar in Arkansas, South Carolina and New York.

Clark Conducts Seminars

DR. JAMES D'ARCY CLARK, consultant of Victoria, B.C., conducted seminars on "A New Approach to Valuation of Pulp" (see page 75, Nov. 1958, PULP & PAPER) and on "Fundamentals of Particle Board" on Nov. 10 and 11 at New York State College of Forestry, Syracuse, N.Y.

A. Nelson Hartnagel Resigns But Plans to Stay in Industry

A. Nelson Hartnagel, who has held the dual positions of assistant resident manager of Fibreboard Paper Products Corp.'s mill at Port Angeles, Wash., and also its Northwest logging and pulpwood manager, has resigned from both positions. He has indicated that he would prefer to stay in this industry in some capacity, and he is investigating several possible new activities. For 15 years, Mr. Hartnagel was assistant resident manager of the mill which makes coated board and other board products, also sulfite pulp and groundwood. Most of this time he served the predecessor company, Fibreboard Products Inc. For 12 years he also headed logging and pulpwood production and was the organizer of that division. He likewise held the title of chief chemist for 15 years, retaining it for some years after he became assistant manager. He is a chemical engineering graduate of the U. of Washington, Seattle, and went directly to work at the Port Angeles mill.

Pacific

ARTHUR T. WALTON, 41, research director of Simpson Logging Co., Shelton, Wash., was instantly killed Nov. 17 near Castle Rock, Wash., when his car crashed into rear of a truck on the highway. . .

MARK SANFORD, formerly vice-pres. and gen. mgr.-paperboard div., Fibreboard Paper Products Co., San Francisco, is now the owner of Contract Machine Shop, 965 Howard St., San Francisco, doing general manufacturing and some pulp-paper mill work. . . GEORGE E. EBERHARD, supt. board mill, Vernon Div., Fibreboard Paper Products, retires next month after 37 yrs. with the company. . . ROBERT W. STEVENS, packaging analyst for Fibreboard Paper Products, was elected general chairman of the 4th Packaging and Materials Handling Conference Mar. 26, at Stanford University. . .

IRVIN H. LUITEN, publicity mgr., Weyerhaeuser Tbr. Co., Tacoma, has been transferred to Portland, Ore., to fill a new position, Oregon public affairs mgr. and KRAMER A. ADAMS, field representative in Oregon since 1955, will succeed Mr. Luiten in Tacoma. . .

Some 87 members and guests of Golden Gate District, TAPPI, meeting in Oakland, heard WILLIAM PARLE, technical director, California Ink Co., speak on strides being made in Europe in the development of new materials for printing inks. Prior to the dinner the group visited Western Waxide Div., Crown Zellerbach Corp.; Longview Fibre Co., and Lord Baltimore Press. . .

JOHN W. PRIESING was appointed west coast sales rep. for Solvay Process Div., Allied Chemical Corp., in the Pacific coast states. He is a graduate of Amherst and has his m.s. from Harvard. . . WILLIAM ZIMMERMAN, of Pac. Coast Assn. of Pulp & Paper Manufacturers, was elected vice pres. Portland chapter Pac. Northwest Personnel Mgt. Assn. . . . W. J. RITCHIE, vice pres. in charge of sls. Western Div. Evans Products Co., becomes pres. of subsidiary Fiddes-Moore & Co. . . .

DON GROVES, chief chemist, and STAN BISHOP, boom man (sometimes called

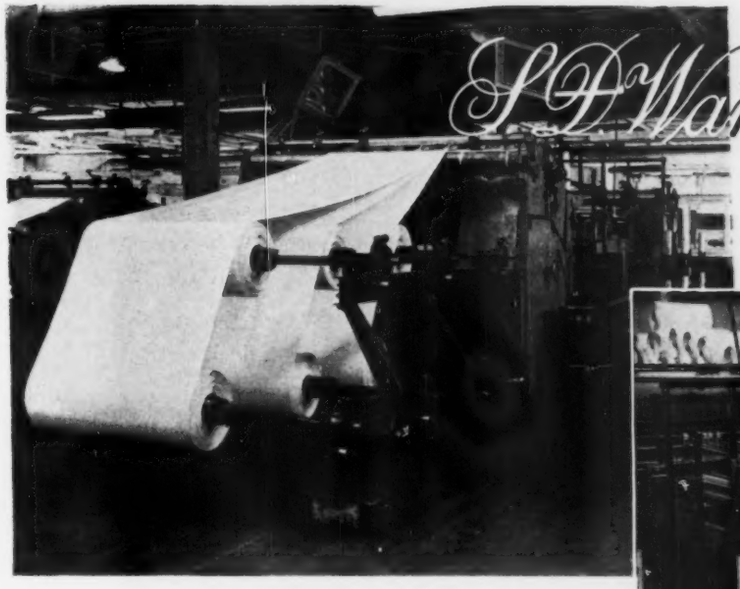
Roy Waaland Bill King W. H. Oliver E. L. Oliver Jr.

Bill King Retires but Carries On as Dorr-Oliver Consultant

His associates celebrated Bill King's tenure of over 35 years as sales and technical rep. for Dorr-Oliver Inc. with a little luncheon at the Bow and Belle restaurant in Oakland, Calif. Present were E. L. OLIVER JR., vice president; W. H. OLIVER, director; and ROY WAALAND, of engineering dept., Oakland offices. Mr. King has been involved in many important pulp and paper industry developments in Pacific Coast mills in his long term of service.

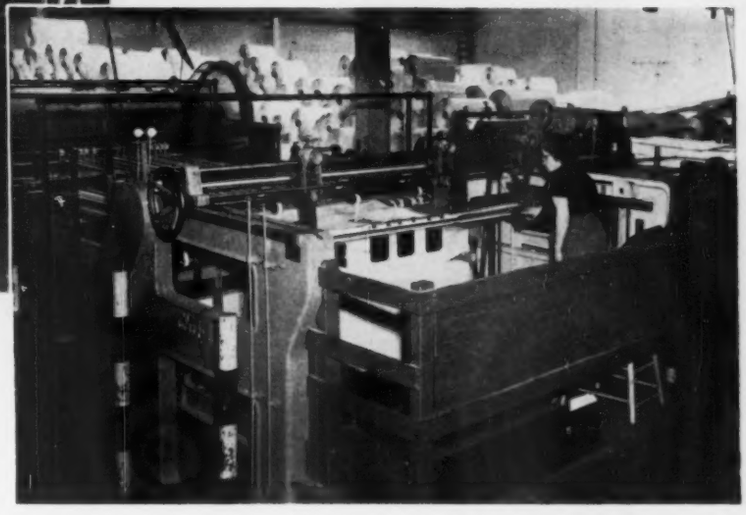
4 *Clark-Aiken* SHEETERS REPLACE 7

and more than double production at



S. D. Warren Company

CUMBERLAND MILLS, MAINE



CLARK-AIKEN machinery is keyed to fast, efficient finishing room production that saves TIME, SPACE and MONEY!

For the S. D. Warren Company, replacing seven machines with four new Clark-Aiken precision engineered sheeters was a wise investment that immediately paid off in production dividends. Tailored by Clark-Aiken engineers to fit their exact requirements, the new sheeters have more than doubled production. And just as important, they maintain high quality with extreme accuracy, require less plant space, give greater production control and eliminate unnecessary labor costs.

If the finishing room has your plant's production bottled up, a consultation with Clark-Aiken engineers can produce a solution that will answer your precise specifications. Their complete knowledge of the paper machinery field can help you realize the practical finishing room automation that will increase your production and lower operating costs. An inquiry to Clark-Aiken will bring you a considered and qualified recommendation.

MR. WALTER S. CARR, Finishing Department Superintendent, S. D. Warren Company, Cumberland Mills, Maine reports:

"We have four Clark-Aiken sheeters in our coated division. These four sheeters replaced seven previously used, and each one more than doubled the production over the cutter it replaced.

"These installations require less setting time because of easy accessibility to adjustments under the layboy.

"The 'Spiral Shear' cylinder knife leaves a clean edge and cuts twice as many sheets at one time as the previous type did.

"P. I. V. Units for changing type speeds give safe running at faster speeds."

THE *Clark-Aiken* COMPANY

957 SPRINGFIELD ROAD

LEE, MASSACHUSETTS

"pond monkey" in parts of the country), appointed to central safety committee at Ketchikan Pulp. . . ERICK BERGLUND, of Ketchikan Pulp engineering dept., is pres. of Ketchikan Toastmasters Club. . . OWEN BROWN, Ketchikan engineering, is doubling as instructor at Ketchikan Community College. . .

WILLIAM C. BIRDSEY, formerly mfg. mgr. of Pioneer Div. Flintkote, Los Angeles, joins Fibreboard in managerial-executive capacity. . . WYNNE WILLIAMS, formerly Gaylord North Texas regional mgr. for Dallas box plant, becomes Gaylord's West Coast mgr. of shipping containers at Oakland. . . Promoted at CZ Port Townsend mill: EDGAR BUTLER from paper mill shift foreman to paper mill supt., HARRY A. POLLARD, asst. to paper mill supt. to paper mill shift foreman, WILTON A. GIANOTTI JR., from junior engr. to asst. to paper mill supt. . .

ALBERT L. SAFINE was named to head the paper research and development programs for the Western div. of Reichhold Chemicals, Inc., P. O. Box 791, South San Francisco. He was formerly with Fibreboard Paper Products. . . . The Stephen Thurlow Co., 1731 First Ave., S., Seattle 4, Wash., telephone Mutual 5488, was named exclusive agent for the state of Washington, B. C. and Idaho, for Stickle Steam Specialties Co. This territory was formely handled by W. A. Roben Co. of Seattle. ROBERT E. WIEGAND, 1415 N.E. Euclid St., Portland 13, Ore., was named agent for the state of Oregon. . . .

Claude M. Stitt, Mill Mgr.

A 35 year veteran of the company, he has been appointed plant manager of the San Joaquin Pulp and Board Mill of Fibreboard Paper Products Corp. He held a variety of important management positions in both manufacturing and engineering. For the past year he had been director of resources, responsible for the development and management of the company's raw material resources. He is a graduate of the U. of California in mechanical engineering. He succeeds T. M. LINDLEY, who has resigned.

JACK V. SAVAGE, sulfite mill supt. CZ Camas, completes his 30th year with the firm. . . . R. A. AUSTIN, who retired from CZ West Linn as woodmill supt. in 1950, died Oct. 17 at age 78. . . .

MEL OLSON, of Simpson Timber Co.'s Central Research Lab at Shelton, promoted to design engr. . . .

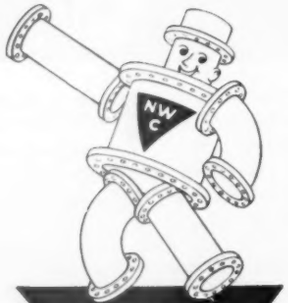
TED MURRAY, asst. to gen. mgr. at St. Regis, Tacoma, son of EDWARD G. MURRAY, vice pres. & gen. sls. mgr. of printing paper div., resigned to return east and go into business for himself. . . . CORYDON WAGNER, vice pres. St. Paul & Tacoma Lbr. Co. div. St. Regis Paper, was chosen by State Dept. to represent U.S. at 16th session of Timber Committee of Economic Commission for Europe, at Geneva. . . . FRANK RUSSELL, 80, Tacoma financier and father of GEORGE F. RUSSELL who is vice pres.-treas. of West Tacoma Newsprint Co., died Oct. 9 following brief illness. . . .

Griffith Rubber Co. awarded a wristwatch to Pur. Agt. RALPH WIEPRECHT who completed 35 years with the firm. He is frequently consulted on roll-covering problems resulting from new high speed equipment used throughout the industry. . . . DONALD J. CARTIER, asst. finishing room foreman, Crown Zellerbach, Camas, succeeds CECIL I. KNAPP as No. 2 finishing room supt. at Camas. Mr. Knapp is retiring. . . . DR. ALBERT W. STOUT, forest products research authority, joined Georgia-Pacific Corp. dept. of research & development, Hillsboro, Ore., as chief of chemical div.

Longview Fibre elects as directors JOHN E. FORESTER, of Wausau, Wis., to replace the late AYTCH P. WOODSON, and GEORGE E. SCHWARTZ, formerly asst. treas., to succeed C. R. ADAMS, who retired. . .

—Louis Blackerby

CUSTOM FABRICATIONS



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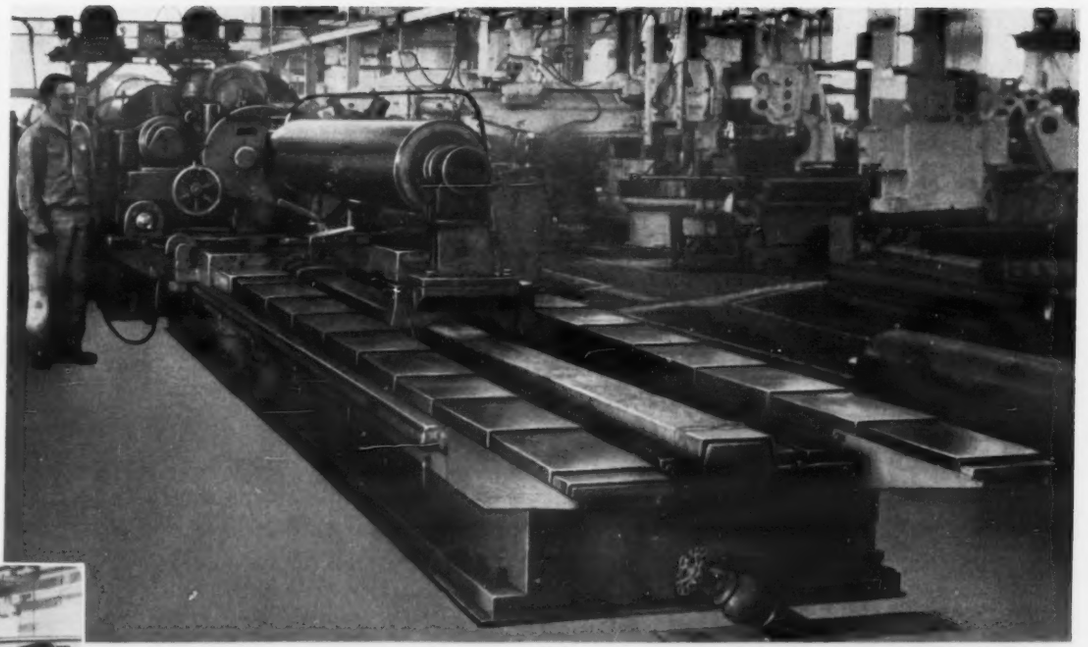
LOBDELL GRINDER

—Latest Addition to Sandy Hill's 10 Year Expansion Program

A Lobdell Roll Grinder, the most modern available, is Sandy Hill's newest acquisition in a ten year re-tooling program now nearing completion. It will accommodate rolls from 6 inches to 8 feet in diameter.

Sandy Hill has had long experience in studying and recommending proper crowning for rolls in each paper machine section. Now a newly designed crowning device incorporated in the new Lobdell Roll Grinder gives a full range of desirable crown curves.

An automatic wheel infeed compensates for wheel wear on chilled iron to eliminate the inaccuracies that are the most common cause of uneven caliper in the finished paper sheet.



- Massive bed and carriage construction.
- Inverted Vee-ways . . . stronger, better lubricated.
- Crowning device . . . designed to give full range of desired crown curves.
- Choice of A.C. or D.C. electrical equipment to suit your mill needs.
- Quick wheel change made easy with grinding wheel mounted on end of wheel spindle.
- Full way protection with metallic telescoping covers.
- Handwheel control on side of wheel-head permits observation of work while feeding wheel.
- Coarse and fine feed of wheel at operator's choice.
- Automatic wheel infeed to compensate for wheel wear on chilled iron.
- Self-contained wheel spindle . . . forced feed lubrication with oil pressure control.

A New LOBDELL Roll Grinder Means FASTER GRINDING

plus:

- PRECISE CROWNING
- BETTER SURFACE FINISH
- MAXIMUM ACCURACY ON BOTH IRON AND RUBBER COVERED ROLLS

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ENGINEERING AND FOUNDRY CO., 948 FORT DUQUESNE BOULEVARD, PITTSBURGH, PENNA.

PULP & PAPER

Strictly Personal

Midwest

JOHN DITMYER is retiring as supt. of Mill No. 1 at Diamond-Gardner Corp. in Middletown, O. He has been associated with the firm and its predecessor—Gardner Board & Gardner Co.—for 58 years and was mill superintendent for more than a quarter of a century. . .

A. E. BACHMANN, pres. and gen. mgr. of Missisquoi Corp., Sheldon Springs, Vt. (div. of Standard Packaging), is to be principal speaker at the annual Papermakers Get-Together sponsored jointly by the Michigan div. of the Supts. Assn. and the Kalamazoo Valley Section of TAPPI. The date set for the meeting is Jan. 15 at the Hotel Harris in Kalamazoo. Mr. Bachman is immediate past pres. of the Supts. Assn. . . RICHARD S. EMBREE is new district sales mgr. in Cleveland for International Paper Co.'s Southern Kraft Paper & Bag div. He became associated with the firm at its Camden, Ark. mill. . .

Construction of the Hinton, Alta., mill in climate ranging from 56° below zero to 100° above and problems incident to such weather variations were discussed by A. C. MCCORRY at a recent joint meeting of the Miami Valley div. of the Supts. Assn. and Ohio TAPPI. Mr. McCorry, manufacturing rep. for the Kraft Pulp div. of St. Regis Paper Co. in Tacoma, Wash., spoke at the Manchester Hotel in Middletown, O. At the time of the building of the Hinton mill of North Western Pulp & Power, Ltd., he was its gen. supt. and later was plant production mgr. (North Western is owned jointly by St. Regis and North Canadian Oils, Ltd.) . . .

Jaro Holy with Consolidated

Joined Consolidated Water Power & Paper Co. as by-product sales representative, it is announced by E. M. MCCOURT, sales manager of pulp, paperboard, waxing papers, sulfite specialties, and by-products for the Wisconsin Rapids, Wis., firm. Mr. Holy has been assistant to the director of the Sulphite Pulp Manufacturers' Research League, Appleton, Wis. since 1956. He succeeds HAROLD LAUSMAN who was recently appointed assistant manager of Consolidated's Appleton Division. Born in Prague, Czechoslovakia, Mr. Holy received a B.A. degree from Northwestern University and a master's from University of Kansas.

Mosinee Paper Mills Co., Mosinee, Wis., and its wholly-owned subsidiary, Bay West Paper Co. of Green Bay, report top management changes: GEORGE L. RUDER becomes board chairman for both firms to fill a vacancy created at Mosinee by the death of A. P. WOODSON and a new post at Bay West. Elected pres. of Bay West was WILLIAM J. SERVOTTE, formerly vice pres. and gen. mgr. B. K. GAGE, Bay West sales mgr. since 1946, becomes vice pres. i/c sales, a new position. . .

The Mead Corp.'s Chillicothe, O., div. has announced major promotions in inspection, steam and electric power and maintenance. LLOYD E. BROWN, chief inspector, becomes quality control director. His successor is PAUL R. FRANCIS of the operating services committee. R. B. MYERS moves from supt. of steam power to an advisory post in that department. Replacing Mr. Myers is KENNETH C. MELVIN, formerly asst. supt. Moving up from day foreman, steam power, to asst. supt. is WALTER V. BROWN. In electric power FRED PLACIER advances from supt. to advisor, while being succeeded by MATTHEW H. BORLAND, asst. supt. DAVID P. STEVENSON becomes maintenance engineer. He was formerly asst. to the dept. supt. . .

RALPH M. KINGSBURY, 56, research chemist at the U. S. Forest Products Laboratory in Madison, Wis., died in November. He had been associated with the lab's Pulp and Paper div. since 1943 and was responsible for work in pulp bleaching and purification. . . Guest speaker at a recent meeting of the Chicago Section of TAPPI was Dr. TOM ZENTNER, asst. tech. director, Diamond-Gardner Corp. Discussing "Rotogravure Printing of Boxboard," Dr. Zentner outlined operations of gravure printing, physical condition of the stock, ink formulation and features of the gravure roll. . .

N. A. GEORGE, vice pres. i/c industrial and public relations of Ohio Boxboard Co., Rittman, O., was named chairman of the Fibre Box Assn.'s industrial relations committee. . .

ARTHUR SNAPPER, former vice pres., was elected pres. of Nicolet Paper Corp., West DePere, Wis., succeeding WILLIAM HELLER. Mr. Heller remains on the board. HENRY FOWLER, gen. mgr. since 1955, was elected vice pres. and gen. mgr. . . C. F. CHAPLIN resigned as vice pres. and director of Allied Paper Corp., Chicago, Ill. MILLARD C. TEAGUE was named di-

Don L. Voigts Named Tech. Asst.

. . . to the vice pres. and res. mgr. of American Box Board Co. at Filer City, Mich. He joined the mill staff in 1943 when the firm was known as Filer Fibre Co. He has held top technical positions for several years.

James S. Evans, Wrenn Mgr.

Named mill manager of The Wrenn Paper Co., Middletown, O., a subsidiary of Mead Corp. He was director of production-quality control at Mead's Kingsport, Tenn. Division. Following graduation from Purdue University with a degree in chemical engineering in 1942 and discharge from the Air Force where he attained the rank of captain in 1946, Mr. Evans joined Mead as an engineering trainee at the Dill & Collins mill in Philadelphia. Later he worked at Chillicothe, O.

Roehr ..... Swanson

K-C Creates New Position In Research and Development

DR. WALTER ROEHR, first senior research associate at Kimberly-Clark Corp., is congratulated by W. H. SWANSON, vice pres. i/c research and development. Dr. Roehr, a graduate of DePauw and Washington University, where he received his m.s. and ph.d. degrees, has been with K-C since 1934. He helped develop the Thwing Formation Tester and the Rotary Rupture and Pick Tester.

rector of quality control and ROBERT M. LEVY, director of research and development for Allied at Kalamazoo, Mich. Both were with Ecusta Paper Corp., Pisgah Forest, N. C., for almost 20 years, where Allied's new president, WARD HARRISON, was formerly tech. director. . .

At a dinner inaugurating Appleton Machine Co.'s 75th anniversary celebration, RICHARD M. RADSCH, long-time sales exec., received a special plaque in honor of his "contributions to the success of the firm." . . . .

DEL HANKE was promoted to development engineer, research and development, for Kimberly-Clark Corp., Neenah, Wis. . . . STUART B. SUTPHIN JR., of The I. V. Sutphin Co., Cincinnati, O., was appointed an exec. reservist of the Forest Products Div., Business and Defense Services Administration in Washington. . . THOMAS C. ELIAS and EARL W. MALCOLM, senior paper technology students at Western Michigan U., will continue studies this year at the Institute of Paper Chemistry. Mr. Elias is the son of R. T. ELIAS, tech. director of Nekoosa-Edwards Paper Co., Potsdam, N. Y. . .

—Don W. Zeigler

Weyerhaeuser Pulp Division In New Offices in Chicago

The Weyerhaeuser Timber Co., Pulp Division, now has a new address and home in Chicago—220 South Michigan Ave., phone: HArrison 7-8141. Making the move are SPENCER SMITH, JOHN SHETHAR and F. T. "TAL" EDMAN and their two secretaries. They are on the 18th floor. This is the new Borg-Warner building, facing the Art Institute and Lake Michigan. Continental Can Co. (including Robt. Gair) has offices in the new building.

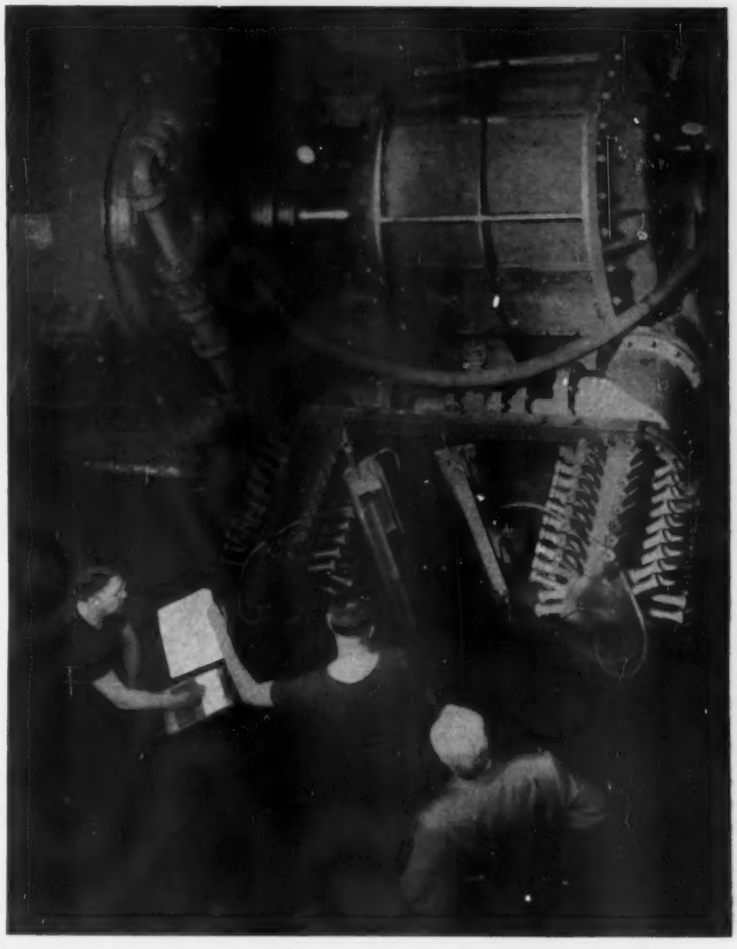
Klein Feldmann Kleine Arndt

German Visitors Tour U.S.

Visiting paper mills and industry leaders in Eastern and Midwestern U.S. in recent weeks were these officials of Feldmuhle Papier & Zellstoffwerke AG, West Germany; Dr. Heinrich J. Klein, chief economist; Heinz Feldmann, vice president, finance; and Dr. H. Kleine Arndt, head of business administration div. In Kalamazoo, Mich., they visited the paper technology dept. at Western Michigan U., under guidance of Dr. Alfred Nadelman.

See story on page 39

Rated performance of every Nash Vacuum Pump is assured by this precise laboratory test



Rated capacities of Nash Vacuum Pumps are not theoretical. Every Nash Pump is tested individually. Air capacity is determined by delivery thru accurately machined and calibrated orifices. Related vacuum is measured by precise mercury column, and horse power is recorded electro-dynamically. Records of these tests are retained by us, and certified copies are available to Nash Pump owners.

That is one of the reasons why Nash Vacuum Pumps are installed in over a thousand leading Paper Mills. An engineer from Nash will be glad to survey your mill, and make recommendations, entirely without obligation to you.

NASH ENGINEERING COMPANY

440 WILSON ROAD, SO. NORWALK, CONN.

Canada

R. H. ("Bob") Scanlon, member of a famous forest industry family and formerly a Powell River Co. executive, died recently at his home in San Francisco, aged 70. Son of the late M. J. Scanlon, a founder of Powell River Co., Bob Scanlon was a director of that organization at the time of his death. He had joined the company in 1910 during construction of original townsite on the British Columbia coast. He served as labor and safety supervisor, townsite mgr. and asst. resident mgr. at Powell River, later went into sales and management . . .

E. W. McBride, vice-president mfg. Abitibi Power & Paper Company, Ltd., announces retirement of W. A. Plant, mill manager of Smooth Rock Fibre Division and appointment of V. Oleskevich as mill manager and W. F. McKee, general superintendent, both appointments effective on the same date. Mr. Plant is retiring on pension after 39 years in the company's manufacturing division at Smooth Rock Falls. Mr. Oleskevich was born in Odessa, Russia, and came to Canada with his parents in 1913. He graduated from McGill University in 1932. . . . T. H. Whitson, assistant traffic mgr. for Crown Zellerbach Canada since 1956, has been named traffic manager, succeeding the late G. R. Bolton.

NO CHIP SILOS OR BINS NEEDED

with open storage by Rader

Rader system blows to outside storage piles at Cascade Kraft. Portable pipe extensions permit distribution of chips over large area.

Cascade Kraft, Wallula, Washington, uses one Rader pneumatic conveyor to blow 120 tons of chips per hour from the rail car dump and truck unloading pit to open storage.

When the pulp mill is completed early in 1959, a second system will convey chips reclaimed from open storage through a 4-way valve to cyclones discharging and compacting chips directly into the digesters, also at a rate of 120 tons per hour.

Specification of Rader pneumatic conveyors by Cascade Kraft assures the finest method of chip handling. Rader systems cost less to install, less to operate and maintain.

Write for additional information!

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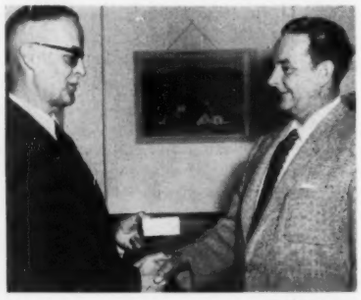
Box 55, Lockport, Illinois
Box 3386, Memphis 17, Tenn.
300 1st Ave., Needham Hts., Boston 94, Mass.

William H. Bush joins Dryden

. . . formerly with Gaspesia Sulphite Co., at Chandler, Que., he has been appointed pulping supt. at Dryden Paper Co., Dryden, Ont.



Emery ..... Beatteay

Gold Watch for Manager

V. H. Emery, manager of manufacturing, pulp and paperboard, Fraser Companies, Ltd. Edmundston, N.B., presents an engraved gold watch to G. C. Beatteay, manager of the company's pulp mill at Atholville, N.B., in recognition of his 25 years' service with the company.

Mr. Whitson has been with the company for 22 years. . . . Gordon Draeske, secretary of Alaska Pine & Cellulose Co., has been made a vice president in charge of administration . . . R. E. Costello has been named general manager of Abitibi Power & Paper Co's. new panelboard division . . . Thomas G. Shepherd has taken over his new duties as gen. supt. of Donnacona Paper Co's. pulp and paper division . . . Palma Leborgne has been named assistant paper mill supt. of Donnacona after 30 years of service in the industry . . . P. S. Quinn, previously mill manager for Anglo-Canadian Pulp & Paper Mills, Quebec City, has been made manager of manufacturing of that company and the subsidiary Dryden Paper Co., Dryden, Ont. . . .

Powell River Co. won British Columbia's Centennial Safety Award. Lyle Wicks, provincial minister of labor, presented a certificate to Russell M. Cooper, vice president and resident top executive at the company's nine-machine newsprint mill . . . Roy L. Campbell, secretary of Canadian International Paper Co., received from the Chartered Institute of Secretaries of Canada a distinguished service award.

—Charles L. Shaw.

WHEN YOU DE-INK WITH . . .

d-i LESTOIL
LIQUID DETERGENT

D-I LESTOIL

1. Dissolves and disperses ink, wax, oils, asphalt, fillers and other contaminants.
2. Promotes rapid and complete defibering — makes fibres free-flowing.
3. Keeps entire system clean — helps prevent slime deposits.
4. Prevents soil deposits and build-ups on wires, Yankee Dryers, etc.
5. Is ideal for washing felts — on or off the machine.

Want to get good, clean, low-cost furnish from mixed wastepapers or other low-grade materials? — Or from rope, rags, cotton linters or cotton mill sweeps? Want a cleaner, clearer sheet with a look of quality that spells profit?

d-i LESTOIL can help you do it — without expensive formulas, without changes in your present equipment and at a saving in time, labor and power.

d-i LESTOIL combines thorough wetting, penetrating, emulsifying and dispersing actions. Added to stock in the boiler or pulper, it quickly and thoroughly removes ink, grease, wax, asphalt, adhesives and other contaminants, and prevents their redeposit in the stock.

What's more, d-i LESTOIL promotes rapid and complete defibering of paper stock, and helps keep your felts, wires and your entire system whistle-clean.

Why not find out — at our expense — what d-i LESTOIL can do for you? For a generous free sample and descriptive literature, write today to

ADELL *Chemical Company*
HOLYOKE, MASSACHUSETTS

Strictly Personal

Pulpwood Notes

New overall logging headquarters for MacMillan & Bloedel have been established at Harmac, near Nanaimo, Vancouver Island. Here gen. mgr. of logging J. O. HEMMINSEN will direct the operations of the company's 12 logging divisions. R. H. DAINES, manager of western district logging, has been made manager of logging production, and H. R. CHISHOLM, manager of eastern district logging, is now manager of logging, engineering and development. . .

ROBERT S. HYDE has been appointed assistant to PAUL M. DUNN, director of forestry, St. Regis Paper Co., New York. Mr. Hyde has been in charge of forest engineering since 1956; and on the technical forest engineering staff of Southern woodlands at Pensacola since 1952. Mr. Hyde was previously research forester with the Pennsylvania Dept. of Forests and Water, and with the U.S. Forest Service. He is a graduate of Dartmouth and received his master's in forestry from Yale. . .

FRED NIELSEN, sales consultant for I-H sales development section at Melrose Park, Ill., died Nov. 15. He had been with International Harvester since 1956, and with the Construction Equipment division since 1953. . .

Veach, Bronson, Hinman Elected by AFPI, Inc.

JOHN B. VEACH, Asheville, N. C., president of Hardwood Corp. of America, was re-elected president of American Forest Products Industries, Inc., at the association's annual meeting here Nov. 7.

J. D. BRONSON, Cascade Lumber Co., Yakima, Wash., (builders of a new pulp and paper mill at Wallula, Wash.,) and JOHN H. HINMAN, International Paper Co., New York, were re-elected vice presidents. D. B. FRAMPTON, D. B. Frampton & Co., Columbus, O., was re-elected treasurer. CHARLES A. GILLETT was re-elected secretary.

Trustees elected for three-year terms were LEONARD G. CARPENTER, McCloud River Lumber Co., Minneapolis; WILLIAM HILTON, Great Northern Paper Co., Bangor, Me.; C. RUSSELL JOHNSON, Union Lumber Co., San Francisco; J. R. KIMBERLY, Kimberly-Clark Corp., Neenah, Wis.; JAMES T. SHEEHY, Rayonier Inc., New York; D. F. MORRIS, The Mead Corp., Dayton, O.; G. W. E. NICHOLSON, Tennessee River Pulp and Paper Co., New York, and R. W. WORTHAM, JR., Southland Paper Mills, Inc., Lufkin, Tex. There are 16 holdover trustees.

Stidwill, Asst. Mgr. in Pakistan

William Francis Stidwill has been named asst. mill mgr. Khulna Newsprint Mills at Khulna, East Pakistan, according to Sandwell & Co., Vancouver, B.C., Canada, engineers supervising construction of the mill. A science graduate in chemical engineering from Queen's University, Kingston, Ont., Canada, Mr. Stidwill was with Howard Smith Paper Mills at Cornwall, Ont., and Montreal and mill mgr. of the Lybster div. of Alliance Paper Mills before assuming his new duties.

800 U. S. Pulp and Paper Leaders Hear Zellerbach Praise European Cooperation

At the $100 a plate Brotherhood Award dinner in his honor, James D. Zellerbach, U.S. ambassador to Italy, and board chairman of Crown Zellerbach Corp., second largest paper industry in the U.S.A., said the "decision to halt or accelerate brotherhood in world affairs may rest chiefly with uncommitted nations."

Over 800 leaders of the United States pulp and paper industry attended the dinner in New York.

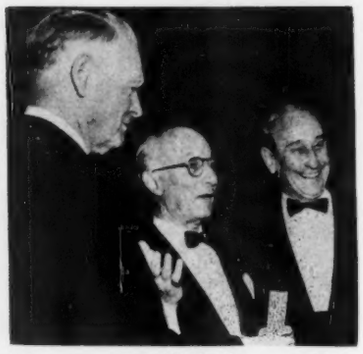
Citing NATO, the Coal and Steel Community, Euratom, The European Common Market and proposed Free Trade Area—"Europe's own great declarations of responsibility"—he said:

"Western Europe has developed the institutions and techniques of international cooperation further than any other area of the world. Its nations today possess the knowledge and resourcefulness to initiate a bold program of economic cooperation with countries outside the European region. I believe Europe, in cooperation with the United States, should undertake such a program."

Mr. Zellerbach said the United States also needs to explain its peaceful intentions clearly to the rest of the world. Many nations are suspicious of the U.S.A. and "only a part of the world fully comprehends we seek no dominion of our own," he said.

He advocated "no give-away, indiscriminate fuzzy-minded" aid program but what he called "a hard-headed policy of making a responsible willingness to cooperate in world affairs the touchstone of our relations with other nations."

Proceeds of the dinner go to National Conference of Christians and Jews, sponsoring the Brotherhood Award.



Hinman Zellerbach Jones

Receives World Brotherhood Award

James D. Zellerbach, United States ambassador to Italy and board chairman of Crown Zellerbach Corp. was honored by the pulp, paper and paperboard industry of the United States at a $100 a plate dinner in New York sponsored by the National Conference of Christians and Jews headed by Dr. Lewis Webster Jones. John H. Hinman, board chairman of International Paper Co., chairmanned the dinner which honored Ambassador Zellerbach "for promoting good will and understanding among all peoples of the world."

Rhys Borlew

Borlew Joins Rhys in Mexico

Peter B. Borlew, formerly with National Container Corp., Owens Illinois Glass Co., Jacksonville, Fla., U.S.A., is now assistant to Dr. L. J. Rhys, mill manager of Celulosa de Chihuahua, S.A., Colonia Anahuac, Chihuahua, Mexico. Mr. Borlew is in charge of the production depts., cost reduction, quality control and training of supervisory personnel. This modern bleached kraft pulp mill, sells pulp to 13 Mexican paper mills. The mill was completed over a year ago and was operated by Kimberly-Clark Corp. (U.S.A.) until recently, when Dr. Rhys, former manager of mills in Brazil and in Czechoslovakia, took charge. It is 64 miles southwest of Chihuahua City.

Sulphur enters the automobile picture in two ways: directly and indirectly.

Sulphur, either as the elemental or as one or more derivatives, is used in the manufacture of rubber and rayon. Indirectly, it is used in processing the steel that forms the body. It is used in the plating operation on trim and fixtures. It is deliberately introduced into certain steels to provide better machining qualities.

Recognizing the importance of Sulphur to the basic industries such as the manufacture of automobiles, and to our ever-expanding economy generally, TGS is broadening its service: production, distribution and technical.

SULPHUR PRODUCING UNITS

• Newgulf, Texas • Spindletop, Texas
• Moss Bluff, Texas • Worland, Wyoming
• Fannett, Texas

TEXAS GULF SULPHUR CO.

75 East 45th Street, New York 17, N.Y.
811 Rusk Avenue, Houston 2, Texas

PULP & PAPER — PICTURES OF PEOPLE IN THE NEWS

Wilfried R. Gerschon Joins Bolton-Emerson Organization

John W. Bolton & Sons, Inc., Lawrence, Mass., U.S.A., announces that Mr. Gerschon has joined its industrial engineering staff. He is a mechanical engineering graduate of Oskar V. Miller Polytechnical Institute in Munich, Germany. Experienced in tool and heavy product design in Germany, he had been engaged as an engineer with Beloit Iron Works.

Egon Kornicer, Asst. Chief Eng.

Egon Kornicer has been named assistant chief engineer of the Patton Mfg. Co. paper machinery builders of Springfield, Ohio, U.S.A. He is a native of Yugoslavia, where he spent many years as plant engineer and technical director of a paper mill. Before joining Patton in 1957, he was plant engineer of a medium sized board mill in Southern U.S.A. He moved to the U.S.A. in 1955. He is a graduate engineer of a technical university of Yugoslavia.

Frank Nerney Promoted by Becco

Becco Chemical Div., Food Machinery and Chemical Corp. Buffalo, N.Y., has created a new Southeastern sales territory comprising the states of Ga., Ala., Miss., central Tenn. and north Fla. Mr. Nerney will be manager of the new territory and will base in Atlanta, according to ALBERT P. SHUTTS, sales manager. The new territory will be separate from the existing Becco Southern sales territory now covered from Charlotte, N.C. with D. STEWART QUERN as manager. Mr. N., a graduate of Lowell Textile Inst. started with Becco in 1938 as a chemist.

Martin H. Rubeck, Albany Engineer

A specialist in multi-cylinder and roofing machines he will be based in Albany, N.Y., headquarters of Albany Felt Co., which he joined in 1947. He has been senior designer.

Clinton M. Law, Lockport Felt

Formerly plant manager of the United Board and Carton Co. at Urbana, O., he has joined Lockport Felt Co. as technical service representative. His 25 years in the industry includes Gardiner Paper Mills (general supt.) and the S. A. Bicking Paper Mfg. Co.

John C. Wallace, Walworth V.P.

Appointed vice president and general manager of the Walworth Co., he will be in charge of manufacturing, engineering, sales and research and development. He was formerly vice president, operations.

G. D. Lewis is New Head of Dominion's Paper Mach. Div.

Mr. Lewis has been appointed manager of the Paper Machinery Division of Dominion Engineering Works Ltd., Montreal, Canada. After graduation he was in engineering work and in army service before joining Dominion Engineering in 1946. He served in various engineering and sales capacities and was successively appointed secretary of the company, market research engineer in the Paper Machinery Division and manager of contracts in the same division.

A Greatly Expanded Office Serving Industry in Far West

Here is evidence of how the Seattle office of C. C. Moore & Co., Engineers, Babcock & Wilcox West Coast representatives, has grown. When DAVID W. HARRIS, manager, joined this office 23 years ago after graduating from Washington State College, there was only a staff of two. Selling, assisting in engineering and servicing power and recovery boiler installations from Alaska to Idaho has brought about this growth. Seated (l to r) GORDON VILLESVIK, MRS. MARY ERNST and MR. HARRIS. Standing (l to r): WESLEY SCIDMORE, LESTER JIRUCHA, JACK JOHNSTON, MRS. JANIECE KILP, MRS. AGNES IVERSON and BEN THORSON.

C. C. Moore has represented B & W for 65 years. In recent years this office was distinguished for its role in the construction of new magnesia base recovery process plants in Ketchikan, Alaska, Longview and Cosmopolis, Wash., the first in the world in the woodpulp industry, and another now going in Sitka, Alaska. Mr. Harris, Mr. Thorson and others of this staff have made more than 80 trips to Alaska on various assignments.

M. H. Mettee, Cyanamid Dyes

His appointment as sales manager of American Cyanamid Co's dyes dept. is announced by DR. WM. H. BOWMAN, general manager of the Organic Chemicals Division. Mr. Mettee will have overall responsibility for the marketing of all dye products and will report to J. H. NAYLOR, manager of the dyes dept. His office will be at Bound Brook, N.J. Mr. Mettee joined Cyanamid in 1932, is a graduate of Johns Hopkins University.

Sayers ..... Mills

Link-Belt Men in Midwest

E. L. MILLS has been appointed district manager of Link-Belt Co.'s Duluth, Minn., district office replacing R. P. SAYERS who is being advanced to the Chicago district sales office, the company's largest. Mr. Mills comes to Duluth from Pittsburgh where he has been district sales engineer since 1954. He has been with Link-Belt since graduation from Purdue in 1948. Mr. Sayers has been with Link-Belt since 1933. He received his engineering degree from U. of Alabama and studied at Northwestern and U. of Illinois.

Stec ..... Raas

In New Posts at Waldron

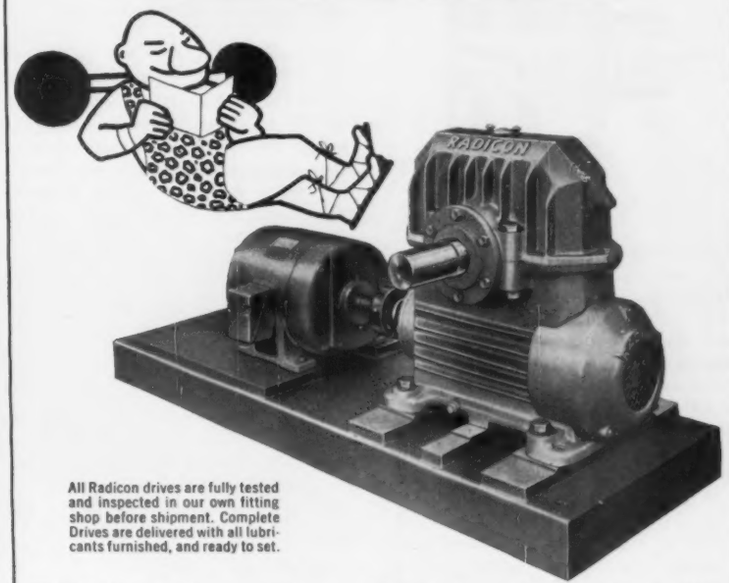
EDMUND A. STEC, previously with A. B. Dick Co., has joined the Chicago sales staff of the John Waldron Corp., subsidiary of Midland-Ross Corp. R. WILLIAM RAAS, formerly production-industrial engineer with Johns-Manville Corp. is now sales engineer in Waldron's machinery division at New Brunswick, N.J.

Almost Nothing To Do...

when you select—

RADICON

COMPLETE DRIVES



All Radicon drives are fully tested and inspected in our own fitting shop before shipment. Complete Drives are delivered with all lubricants furnished, and ready to set.

Eliminate a major part of your drive design problems—just position the efficient new Radicon Complete Drive, set six bolts, and you're ready to roll!

No need to buy reducers, motors, couplings—then spend time shimming and aligning. Radicon reducers and motors are already carefully shimmed and aligned on heavy fabricated steel base plates, of double box construction, firmly ribbed for rigidity. This means minimum stress at the flexible coupling...long service, low maintenance.

Fan-cooled Radicon Speed Reducers, like the type RHU shown with the above complete drive, are being specified by original equipment manufacturers in many industries these days. They have learned Radicon's ability to withstand extremes of temperature, dust, dirt and rain—all with low initial cost, and low maintenance! Find out for yourself—*write* or *phone today*.

Immediate delivery 3" to 14", all standard ratios from 5:1 to 60:1. Radicon complete drives supplied by all authorized David Brown factory branches and distributors.

DAVID BROWN, INC.

999 Beecher Street, San Leandro, Calif. • 6025 Atlantic Blvd., Maywood, Calif.
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David Brown, Inc.
999 Beecher Street
San Leandro, California

Send me the facts—about Radicon Speed Reducers and Radicon Complete Drives that can be installed in minutes!

Name_____ Title_____

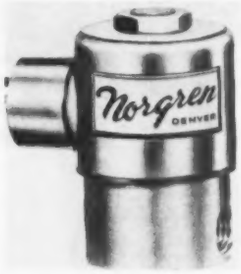
Company_____

Address_____

City_____ Zone____ State_____

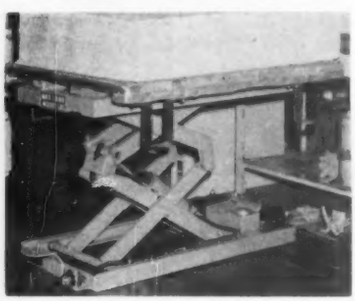
New Equipment Section

Solenoid Valve Models
. . . Have Unusual Design



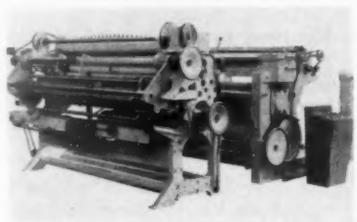
Applications: To control flow of air, oils, cold and hot water and gases.
Advantages: All models may be serviced easily without removing from the line and without special tools. Low amperage coils are rated for continuous duty and have splashproof, nickel plated housings. All valves will operate in any position and come with two ¼ in. mounting holes in base of body.
Specifications: Series A, available in ⅛ in. and ¼ in. pipe sizes, includes 2-way, 3-way and directional solenoid valves in both normally closed and normally open types. Series B is a midget, 2-way normally closed valve with ⅛ in. NPT ports. Both series assure operation up to 600 cycles per minute, with life expectancy of over 30 million cycles. Both series are designed to operate at temperatures from −20° F. to 200° F. ambient and −20° F. to 175° F. media. Coils are available to operate at all common AC and DC voltages and frequencies.
Supplier: **C. A. Norgren Co., Englewood, Colo., SUnset 1-5586.**

Portable Lift Tables . . .
. . . Designed for Handling Paper



Applications: For handling paper, with a variety of accessories and controls for special applications.
Advantages: New line of portable lifts are adaptable to a wide range of platform sizes and capacities, and feature high speed (for up and down travel) and sensitive controls. Safety feature is that down travel speed is the same whether at full load or no load. In case of power failure, lift locks in position and cannot be moved till power is restored.
Specifications: Capacities of Pantograph lift tables range from 1,000 to 6,000 lb., with vertical travel from 31 to 60 in. and minimum collapsed height from 5 to 8¼ in. depending on size of unit and whether with or without roller bearing wheels. Platform sizes range from 18 x 42 to 36 x 84 in. Down travel time is 10 sec. minimum with up travel time fully loaded varying from 22 to 70 sec. Optional items include DC or battery operated pump units; hand or foot operated pumps, where speed is not important; spring loaded toe guards for lifts built into floor; air motor with air operated valve for hazardous locations; electric eye control for up and/or down operation; and an automatic stacking switch for sheet material.
Supplier: **American Mfg. Co., Tacoma, Wash., MArket 7-6153.**

Automatic Rewinder
. . . Has Shear-Cut Perforating Unit



Applications: For rewinding rolls.
Advantages: Rewinder transfers the web automatically for each set of rolls while running full speed continuously. One operator can operate two rewinders because the mandrels remain in the machine and an automatic core loader eliminates manual labor. The rewinder has the shear-cut perforating unit. An accurate roll count is made with a clean cut-off and a variable count can be arranged to allow the customer to furnish different size rolls.
Specifications: Model 2481 rewinder is a 90 in. machine with continuous operation at speeds over 1,000 fpm. Embossing unit has air-loaded 20 in. diameter paper and steel embossing rolls with micrometer adjustments for accurate control of nip pressure. The unwind stand is a shaftless belt-driven type that takes 60 in. diameter jumbo rolls. It is designed with an automatic, constant tension dancer roll.
Supplier: **Paper Converting Machine Co., Green Bay, Wis., U.S.A. HEmlock 5-7531.**

New Chain Saws
. . . Are Easy to Handle

Applications: For pulpwood logging operations.
Advantages: Light weight, powerful and perfectly balanced, new 7-19 and 7-21 chain saws are very easy to handle. New cylinder design provides 12% more cooling area. Balanced drop-forged, steel alloy crankshaft has double row ball bearings on clutch end and caged needle bearing on magneto end.
Specifications: Direct drive 7-19 saw weighs 19 lb. and can fell trees up to 5 ft. in diameter. Straight blades in sizes 12 to 30 in. are available. Model 7-21 weighs 21 lb. and cuts trees up to 7 ft. in diameter. Straight blades are available from 14 to 60 in. sizes. Both models can be provided with plunge cut bow, brushcutter and clearing bar attachments.
Supplier: **Homelite, Port Chester, N.Y., WEstmore 9-3400.**

Fire Protection Gate Valve
. . . Has Extended Service Range

Applications: For fire protection in networks and areas where the temperature and/or processed fluids exceed 160° F., formerly the limitation of the valve's application.
Advantages: One link, selected for desired maximum temperature exposure, is inserted in the valve's specially designed bonnet. When the link melts, stainless steel springs are released and the valve is immediately closed to prevent any further fluid from feeding into the network. A rotating double disc assembly maintains a tight seal should the body distort at elevated

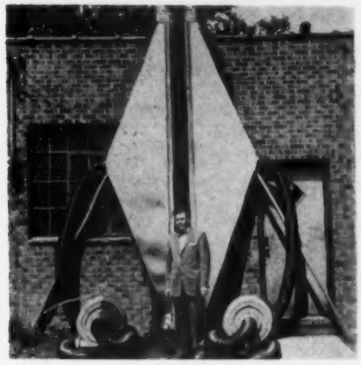
temperatures. Color coding of links makes temperature service easily identified from a distance.

Specifications: New links have melting points of 212°, 250°, 286° and 360° F. Produced for 150 psi service, the valve is available in both screwed and flanged ends, in sizes from ½ in. to 2 in. Valve body is cast in stainless steel 304, 316, FA-20 as well as nickel and monel.

Supplier: **Cooper Alloy Corp., Hillside, N.J., MUrdock 8-4120.**

Automatic Web Cleaner

. . . Rids dust, lint, loose particles



Applications: Cleaning dust, lint, loose shreds and wads from the paper web.

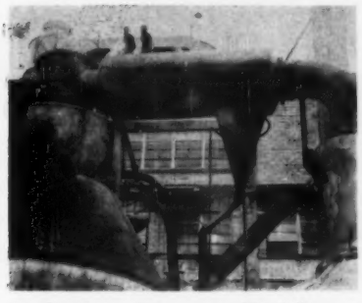
Advantages: Automatically takes off all foreign particles to assure delivery of clean paper. The unit first brushes loose particles on the surface of the paper by an adjustable brush system. The particles are then directed into a suction air stream through a series of patented diagonally-grooved nozzles.

The contaminated air stream is then directed through a suitable manifold and exhaust tubing. Removed particles are deposited into a filter dust collection bag or are vented to the atmosphere. This eliminates periodic cleaning of the bag.

Supplier: **The J. E. Doyle Co., 1220 West Sixth St., Cleveland 13, Ohio.**

Special Purifier

. . . Provides Greater Savings



Applications: To remove black liquor, wood fiber and other impurities entrained in vapor from digester blow tank. Pictured above is installation at southwestern paper mill.

Advantages: Since it removes impurities by centrifugal action, it has no filters and no moving parts, thus simplifying maintenance. While the entire unit weighs over 8,500 lb., it is almost self-supported between the digester and blow tank and requires no supporting structure expense.

Specifications: Designed to remove entrained pulp and liquid equivalent to 250 pph, the Centrifix CD Purifier operates at a flow of 160,000 lb. of steam per hr. at 1 psig with pressure drop of only 1.23 in. of water. Outer diameter is 6 ft. 11 in., with overall length of 19 ft. 3 in. and 48 in.-diameter inlet and outlet openings. The hopper has an outer diameter of 60⅝ in. at its top, an 8 in. diameter opening at its base and overall length of 12 ft. 8 in.

Supplier: **Centrifix Corp., 3608 Payne Ave., Cleveland 14, O., EXpress 1-9600.**

New Dryer

. . . Decreases Drying Time

Applications: For drying or curing material in or on a moving web of paper.

Advantages: Use of high velocity jets

CIBA

2 NEW FAST "PAPER-PROVED" DIRECT YELLOWS

DIRECT YELLOW P-CD
DIRECT YELLOW P-RCD

HERE IS NEW FASTNESS for popular yellow shades in sulphite bonds and ledgers, mimeo, offset printing stocks, and other grades to be written or printed upon. In addition, they offer good hue characteristics for grades such as specialty bags, waxings, etc. Excellent money values for all these grades, both **Direct Yellow P-CD** and **Direct Yellow P-RCD** have excellent light fastness and good fastness to acid and to water. Fastness to alkali is superior to that of most other Direct Yellows, being excellent to 1% sodium hydroxide. **Direct Yellow P-CD** and **Direct Yellow P-RCD** are completely bleached with low concentrations of sodium hypochlorite. In tests for compatibility with fillers, the runs show exceptionally good two-sidedness characteristics.

For full details, samples, etc., address . . .

CIBA Company Inc., Paper Chemicals Department
627 Greenwich Street, New York 14, N. Y.

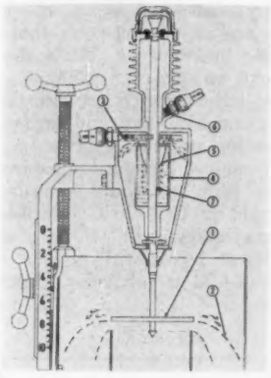
of air forced through nozzles, as well as high temperature, speeds the drying process. This new dryer has low initial and operating costs, is efficient, requires a minimum of floor space and has a wide operating range.

Specifications: A Jetzone dryer consists of a housing containing recirculation fans and heating equipment feeding the distribution plenums which, in turn, supply heated air to the nozzles (tubes or slots). Type A Jetzone is favored for producing coated, printed or gummed papers, and Type C for saturated and impregnated materials. Accessories designed for use with both types are: fully wired panel board for steam or gas fired models with recorder controller; exhaust or transfer fan with piping; and insulation. Also available for Type C are conveyor head and tail stands together with chain for any required number of zones.

Supplier: **Wolverine Equipment Co., Inc., 31 Main St., Cambridge 42, Mass.**

Floating Disc Element

. . . For Newtonian Suspensions



Applications: To measure and control thin pulp suspensions.

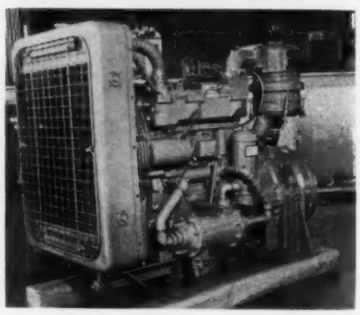
Advantages: The new floating disc element easily attaches to the Källe consistency indicator to replace the conical self-compensating sensing element for non-Newtonian suspensions. The disc is unaffected by unscreened pulp with knots or a wide range of flow rate variations. Informations from the indicator is fed to a control unit that automatically dilutes the measured suspension to the correct consistency. Attaching the floating disc is simple and quick.

Specifications: With the floating disc, consistencies between .6 and 1.7% can be measured accurately. With the two types of sensing units, it is possible to control suspensions over a range from .5 to 6%, at any rate of flow, with a minimum of attention and maintenance.

Supplier: **The Rosenblad Corp., 1270 Sixth Ave., New York 20, N.Y., U.S.A. CIrcle 7-8462; and Kalle, Aktiebolaget, Kalle-Regulatorer, Saffle, Sweden.**

New Diesel Engine

. . . Is Smaller, More Powerful



Applications: For industrial engine uses.

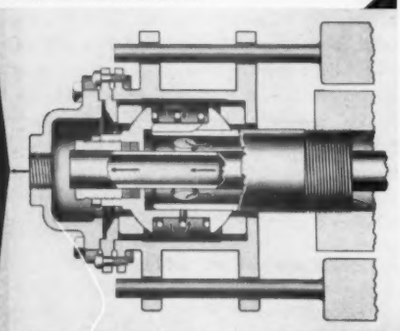
Advantages: Replacing the Cat D311, the D311 (Series H) has increased maximum output capacity more than

For High Speed Paper Machines with Revolving Syphon Pipes

In the Type LN Johnson Joints the revolving syphon pipe is made a part of the rotating assembly, yet is permitted longitudinal movement. Sealing is still accomplished without packing. Simple support rods carry all the weight of joint and connections, permit the rotating assembly to "float" freely inside. Special hangers and brackets adapt the mounting for machines with either open or enclosed gearing.

Johnson Joints fit all needs on paper machines, calenders, corrugators, waxers, embossers, roofing machines, printing presses. For full data on Type LN write for Bulletin N-2002.

Type LN Johnson ROTARY PRESSURE Joints "First in the paper industry"



THE JOHNSON CORPORATION
849 Wood St., Three Rivers, Michigan

ROGERS
MODEL 300 EXTRA HEAVY DUTY KNIFE GRINDER
with HYDRAULIC DRIVE

SIZES:
78" to 240"
CAPACITY.

Other Standard Equipment includes Heavy Duty Precision Ball Bearing Spindle, 26" Segmental Grinding Wheel, 25 HP TEFC Motor, Automatic Force Feed Oiler, 8" x 8" Swiveling Knife Bar, Wet Grinding and Precision Wheel Dresser. Write for complete information. Other Models available.

SINCE 1887
SAMUEL C. ROGERS & CO., INC.
2070 SHERIDAN DRIVE • BUFFALO 23, NEW YORK

WHERE THERE'S BUSINESS ACTION THERE'S A BUSINESSPAPER

Some blessings we take for granted. Like ice cubes. Or indoor plumbing. However, older men—wiser men—say a little prayer of thanks for things they know they couldn't do without.

Among these wiser men are the men who make top-level decisions in business.

To make decisions, they must have facts. All the facts. All the pertinent information they can get. And they get a major portion of that information from one unique source: the business publications they subscribe to.

No businessman is fully informed until he reads his businesspaper. He reads it for profit, not for pleasure. He searches it through for news of the trade or industry. For facts. For fresh ideas. For new products he can put to work. And he reads the advertising with the same intense concentration he devotes to the editorial pages.

He knows that his businesspaper is vital to his success—to his very livelihood. And he says a little prayer of thanks.

Every man on the way up can profit from his example. Take a tip from the reading habits of key men at every level. Take out a subscription of your own. Read every issue...and read it searchingly. It's *your* businesspaper, too.

PULP & PAPER

370 Lexington Ave., New York 17, N.Y.

One of a series of advertisements prepared by THE ASSOCIATED BUSINESS PUBLICATIONS

15%. In size it is 9 in. shorter, 17 ft. lower and 350 lbs. lighter than the D311. Harmonic balancers provide six-cylinder smooth performance with four-cylinder engine. Fuel system uses capsule-type fuel injection valves and pumps, the same general design as has been used on Cat engines since 1931. Air, electric or gasoline starting is available. New gasoline engine is side-mounted instead of end-mounted, providing shorter installation.

Specifications: This 4-cycle, naturally aspirated, valve-in-head model has 4 in. bore and 5 in. stroke. The 252 cu. in. displacement engine develops 75 hp at 2,400 rpm. It has intermittent output rating of 68 hp and continuous rating of 50 hp at 2,000 rpm. Generator for use with this engine has 30 kw continuous rating and is completely self-regulated. A turbocharger, available soon, will considerably increase all above ratings.

Supplier: **Caterpillar Tractor Co., Engine Div., Peoria, Ill.**

Absolute Pressure Transmitter
. . . Accurately Senses, Transmits

Applications: For sensing and transmitting absolute pressure measurements.

Advantages: Accurate to 0.5% of full scale, the transmitter has no direct drive pen or pointer. Thus full transmitter power is available to operate all standard receivers over long distances. A force balance instrument, this Type 13AA d/p cell transmitter produces a 3-15 psi linear signal proportional to absolute pressure.

Specifications: Measurement ranges are continuously adjustable between 0-50 and 0-250, or 0-200 and 0-850 in. of water absolute. Transmitter parts exposed to process fluids are of Type 316 stainless steel. Overrange protection is provided to full 1,500 lb. working pressure. Maximum operating temperature is 250° F.

Supplier: **The Foxboro Co., Foxboro, Mass., KIngswood 3-5311.**

LITERATURE

National Aluminate Offers New Colloidal Silica

Nalcoag, a new colloidal silica is offered as an aqueous suspension of 15, 30, or 35% silica by National Aluminate Corp. It is used as an anti-skid treatment for all types of paper containers.

Nalco expects it to prove useful as an additive for strengthening paper and a treatment for improving soil resistance, wetability, ink absorption and other surface characteristics of paper products. Colorprint photographic papers produces sharper pictures and accept dyes better when so treated. Write Nalco, 6216 West 66th Place, Chicago 38, Ill., for Nalco Bulletin K5.

Appleton Woolen Photos Help

How to use photographic work sampling to lower labor costs, improve quality and increase production is explained in an article by Industrial Engineer Robert L. Barlament, entitled "Photographic Work Sampling—A New Cost Control Technique." Write: Promotion Dept. Appleton Woolen Mills, Appleton, Wis.

Dow Waste Treatment

The Dow Chemical Co. has completed a 32-page bulletin about Dowpac, the company's new plastic packing material used in the biological oxidation of liquid wastes. It contains illustrated information on the product's physical properties, assembly instructions and operational characteristics. For "Dowpac-Applications in Waste Treatment," write Plastics Merchandising Dept., The Dow Chemical Co., Midland, Mich.

Centralized Control Systems

Bulletin 106 (16 pages, 2-color) illustrates and describes the design approach, materials, construction and modern facilities used in manufacturing a variety of centralized control and data presentation system. Write Panellit, Inc., 7401 No. Hamlin Ave., Skokie, Ill.

MEETING DATES CALENDAR

Jan. 20
Pacific Coast Section, TAPPI
Aberdeen, Wash.

Jan. 23
Southeastern Section, TAPPI
Gen. Ogelthorpe Hotel, Savannah, Ga.

Jan. 27
Miami Valley Div. APPMSA
Manchester Hotel, Middletown, O.

Jan. 27
Golden Gate District, TAPPI
Claremont Hotel, Berkeley, Calif.

Jan. 28-30
CPPA Annual Meeting
Queen Elizabeth Hotel, Montreal, Que.

Feb. 2-6
Canadian Maetrials Handling Exposition
Exhibition Grounds, Toronto

Feb. 12
Michigan Div., APPMSA
Hotel Harris, Kalamazoo, Mich.

Feb. 22-26
Paper Week—APPA, TAPPI, SAPI
Waldorf-Astoria and Hotel Commodore, New York

Mar. 16-20
National Assn. of Corrosion Engineers. Pulp and Paper Symposium
Hotel Sherman, Chicago, Ill.

Mar. 23-26
Folding Paper Box. Assn. of America
Drake Hotel, Chicago, Ill.

Apr. 21-28
Netherlands Packaging Exhibition EUROPAK 1959
RAI Exhibition Halls, Amsterdam, The Netherlands

Apr. 30-May 3
Penn-Jer-Del Div. APPMSA
Robert Treat Hotel, Newark, N. J.

May 21-23
Pacific Coast Div. OPPMSA and Pacific Coast Section, TAPPI—Multiple Water Use Seminar
Gearhart Hotel, Gearhart, Ore.

May 25-27
TAPPI Coating Conference
Hotel Statler, Boston, Mass.

June 2-4
APPMSA National Meeting
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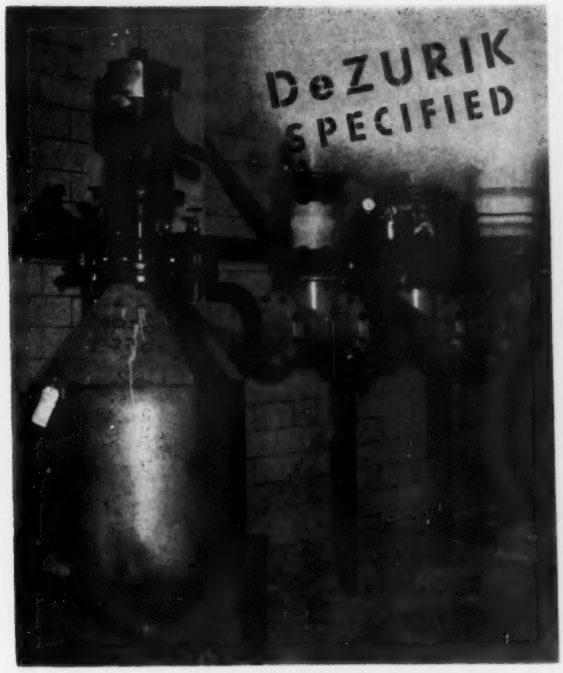

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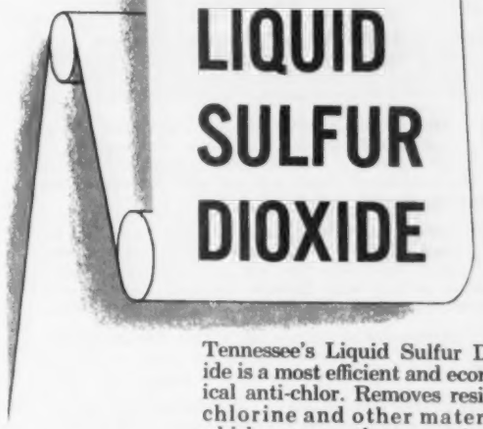

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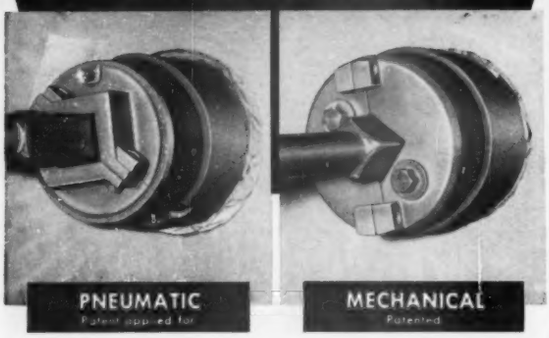

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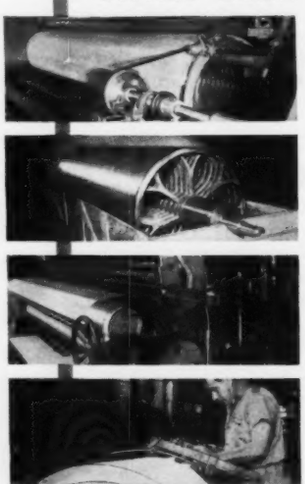

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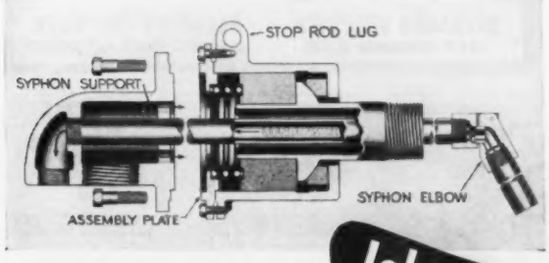

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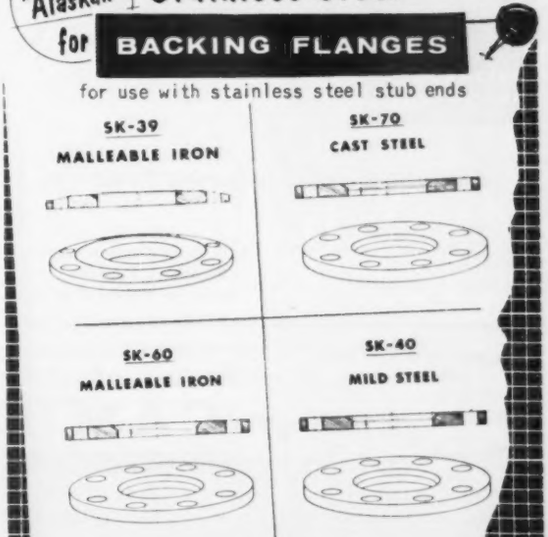

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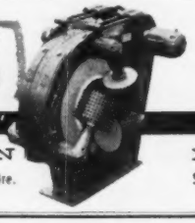

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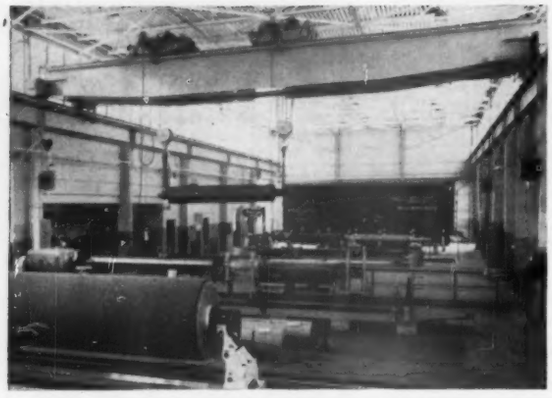

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The Last Word PULP & PAPER Editors' Page

THE WHITE HOUSE
WASHINGTON

November 3, 1958

Dear Mr. Wilson:

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The President has often spoken of the need for increased commerce between nations. In its special field, as your magazine serves to strengthen the bonds which unite businessmen in all lands, I know it will advance the cause of peace everywhere.

On behalf of the President, it is a pleasure to send best wishes for the success of "Pulp & Paper International."

Sincerely,

James C. Hagerty
Press Secretary
to the President

Mr. Albert W. Wilson
Editor
"Pulp & Paper International"
1791 Howard Street
Chicago 26, Illinois

HERBERT HOOVER

The Waldorf Astoria Towers
New York, New York
October 27, 1958

Dear Mr. Wilson:

I heard somewhere that from little acorns great oaks do grow. Certainly from little actions grow also pulp and paper and magazines about them.

Good luck!

Yours faithfully,

Herbert Hoover

Mr. Albert W. Wilson
1791 Howard Street
Chicago 26, Illinois

New Magazine Now a "Regular"

This New Year brings the first regular monthly edition of PULP & PAPER INTERNATIONAL, a new companion publication of PULP and PAPER. The new magazine will serve readers in this industry throughout the world, outside of the U.S.A. PULP and PAPER will continue to serve United States readers, and, of course, other readers in Canada and elsewhere who wish to carry on with it.

It is recognized that there are some individuals, because of their varied interests or responsibilities, who will subscribe to both.

PULP & PAPER INTERNATIONAL will be a distinct magazine, edited especially for a readership in about 70 countries outside U.S.A. borders, serving them all equally and fairly, and bringing to them the special kinds of information which will be helpful to them in their business and their operations.

This should be an auspicious New Year for readers of both magazines, and, incidentally for the magazines themselves. A worldwide upturn in the pulp and paper industry is predicted, as indicated in the lead articles of this issue of PULP & PAPER. It is likewise interesting that so many management leaders and economists in both paper and paperboard industries in this country are so uniformly in agreement in foreseeing a steady increase in United States production—up to around 5% to 7% for 1959.

It should be gratifying that no one is looking for anything sensational to happen, but that expectations are for steady, sound growth.

Needed—A Marketing Industry

There are a few exceptions, which will come immediately to mind, but generally speaking this industry has not given as serious attention to marketing as others have. The heavy emphasis in pulp and paper has been on manufacturing and finance. There was plenty of market.

This meant that mediocre marketing methods were allowed to develop, and it may be said that these still characterize too many companies in the pulp and paper field. With the stepped-up competition of aluminum, tin, glass, synthetic fibers, plastics and other materials for traditional paper and paperboard markets, it is going to be extremely unhealthy to permit this situation to persist.

Many companies are awakening to the necessity of developing new techniques for marketing and distribution of the products of this industry. In this connection, Chairman of the Board Howard Whitaker of The Mead Corp., summarized the situation recently by telling his associates that Mead must become a marketing company instead of just a manufacturing company.

"Marketing is starting from the customer's viewpoint rather than the manufacturer's," he said. "This means, first, finding out who the customers are; second, what they want, and third, how much they will pay. Then, on the basis of this knowledge, decide whether or not we can sell or produce the product for them at a fair profit for the company."

This seems to sum up quite adequately just about the most important problem facing this industry and the way it must be solved.

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